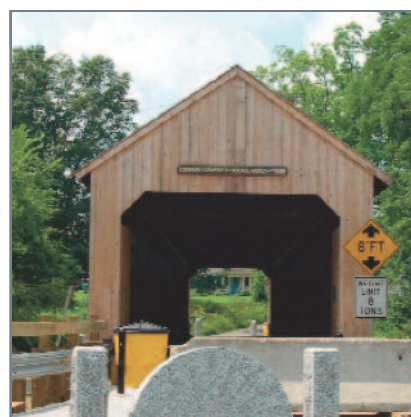


2012 REGIONAL TRANSPORTATION PLAN



*Providing a vision for the county's transportation systems
in a context that is suitable for the rural nature of the region*

2012 REGIONAL TRANSPORTATION PLAN

2012 Regional Transportation Plan

September 2011

Prepared by:

Franklin Regional Council of Governments
425 Main Street, Suite 20
Greenfield, MA 01301

Main Telephone: 413-774-3167
Fax: 413-774-3169

www.frcog.org



2012

FRANKLIN REGIONAL TRANSPORTATION PLAN

September 2011

Franklin Regional Council of Governments

Pat Allen, Chair, Franklin Regional Council of Governments
Bill Perlman, Chair, Franklin Regional Council of Governments Executive Committee
Lois Stearns, Chair, Franklin Regional Planning Board

Franklin County Transportation Planning Organization

Richard A. Davey, Secretary and CEO of Transportation, MassDOT
Francis DePaola, Administrator, Highway Division, MassDOT
Bill Perlman, Chair, Franklin Regional Council of Governments Executive Committee
Ann Banash, Franklin Regional Council of Governments Regionally Elected Representative
Rick Kwiatkowski, Chair, Franklin Regional Transit Authority
William Martin, Mayor, City of Greenfield
Robert Dean, West County Sub-regional Representative
William Shores, Central County Sub-regional Representative
Vacant, East County Sub-regional Representative

Ex-officio, non-voting members:
Chair of the Franklin Regional Planning Board
Federal Highway Administration
Federal Transit Administration

2012

FRANKLIN REGIONAL TRANSPORTATION PLAN

September 2011

Transportation Staff

Margaret Sloan, Director of Planning and Development
Maureen Mullaney, Transportation and GIS Program Manager
Elizabeth Giannini, Senior Transportation Planner
Stacy Metzger, Transportation Planning Engineer
Megan Rhodes, Transportation and Land Use Planner
Jessica Atwood, Data Manager/Economic Development Planner
Ryan Clary, Senior GIS Specialist
Gretchen Johnson, Planning Grant Administrator
Alyssa Larose, Land Use Planner

Prepared under contract 0056006 in cooperation with the Massachusetts Department of Transportation, the U.S. Department of Transportation, and the Federal Highway Administration.

2012 FRANKLIN REGIONAL TRANSPORTATION PLAN


Franklin County Transportation Planning Organization Committee of Signatories
Endorsement of the 2012 Regional Transportation Plan


Richard A. Davey, Secretary and CEO of Transportation
MassDOT

14 Sept 11
Date


Francis DePaola, Administrator
MassDOT


09/14/11
Date


Bill Perlman, Regionally Elected Representative to the
FRCOG Executive Committee

9/14/11
Date


John Pacioek, Chair
FRCOG Executive Committee

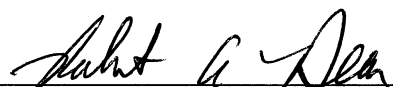
9/14/11
Date


Rick Kwiatkowski, Chair
FRTA

9/14/11
Date

William Martin, Mayor
City of Greenfield

Date


Robert Dean, West County
Sub-regional Representative

9/14/11
Date


William Shores, Central County
Sub-regional Representative

9/14/11
Date

Vacant, East County
Agency

Date

#	CHAPTER TITLE
1	Introduction
2	Public Participation Process
3	Transportation Planning Goals
4	Regional Economic and Demographic Profile
5	Road and Bridge Infrastructure
6	Freight Transport
7	Passenger Rail
8	Airports
9	Transit and Paratransit Services
10	Livability: Bicycle and Pedestrian Facilities
11	ITS and Telecommunications
12	Transportation and Climate Change
13	Transportation Safety
14	Transportation Security
15	Scenic Byways and Tourism
16	Air Quality Conformity Determination
17	Recommended Projects
18	Financial Constraints

1



Introduction

1 Introduction

Franklin County is the most rural county in the Commonwealth and as a result, transportation planning and its implementation pose interesting challenges. Its sparse population and large geographical area naturally constrain many modes of travel beyond that of the private automobile. The large area that the transportation network covers also makes it difficult to efficiently provide improvements. In spite of these obstacles, Franklin County has had a very successful track record in maintaining, improving, and preserving its transportation system. The Franklin County Long Range Regional Transportation Plan, that is updated every four years, helps to provide a clear vision of the county and prioritizes its needs in a context that is suitable for the rural nature of the region.

This Regional Transportation Plan (RTP) update focuses on the importance of providing safe, efficient mobility for residents, while taking into account the rural character of the county. The RTP specifically emphasizes the following goals: preservation and improvement of the existing transportation system, while also maintaining the region's scenic and natural resources; providing residents transportation alternatives to the singly-occupied vehicle; strengthening the local economy and industries, including tourism; improving the environment through water and air quality protection; and safeguarding the region's quality of life.

As in years past, safety is a major focus for this update to the Regional Transportation Plan. The safety of the regional transportation system has been and will continue to be a high priority when evaluating and setting the agenda for regional transportation projects and activities. It is crucial that existing roads and bridges are maintained to ensure a safe transportation system. For this reason, projects that will make the existing system safer, more efficient, more secure and better able to support the goals of this RTP are prioritized in the region rather than those that will create new roads or add capacity to the region's roadways.

With the recent rise in gasoline prices in the past few years, there has been a renewed support for the active exploration and implementation of alternative transportation options for the region. The Franklin Regional Council of Governments (FRCOG) has recently completed several studies on this subject. Through the work on those studies, the completion of this Regional Transportation Plan update, and the accompanying public participation process, it is clear that there is a very strong interest in expanding the regional system to include additional alternative transportation modes to the singly-occupied vehicle.

Specifically, there is a very strong demand for expanded public transit services either through the establishment of new routes to unserved areas of the region, or the initiation of additional service runs on existing routes. The recent completion of new sections of the Franklin County Bikeway has prompted increased interest in bicycling as an alternative means of transportation. Additionally, interest has been expressed for new park-and-ride facilities throughout the county and a greater exploration of developing passenger rail services for the region. The construction of the Franklin County Regional Transit Center, that is currently underway, is a symbol of the high amount of interest in alternative transportation in the region. The Regional Transit Center is intended to serve many modes of transportation including buses, passenger rail, paratransit, taxi, and bicycling.

This Regional Transportation Plan (RTP) update focuses on the importance of providing safe, efficient mobility for residents, while taking into account the rural character of the county.

During the development of the 2012 Regional Transportation Plan, a particular emphasis was placed on public participation and outreach. Chapter 2 details the public participation process that was undertaken during the creation of this update. The Franklin County Transportation Planning Organization (TPO) recognizes that there are finite financial resources available to advance the recommendations of this report. Therefore, in order to ensure that the recommendations are financially

realistic, a financial component has been included as part of this plan.

The Franklin Regional Council of Governments

The Franklin Regional Council of Governments (referred to as the FRCOG) serves the towns of the Franklin County Region in the upper Connecticut River Valley in Western Massachusetts. The FRCOG integrates regional and local planning, human service advocacy and coordination, and the provision of municipal services such as cooperative purchasing and building inspection to advance the following regional goals:

- Balancing economic development with the protection of natural and cultural resources, and with the rural character and heritage of the region;
- Ensuring the most economical creation and delivery of public services in a rural region comprised of many political subdivisions;
- Building healthier communities by developing and connecting broad-based coalitions, which raise the level of expectations for community achievement.

The FRCOG advocates on behalf of its member communities at the state and federal level to ensure that funding, programs, and policies are sensitive and respond to the rural nature, economic strengths, and human and natural resources of the region.

Additionally, the Franklin Regional Council of Governments serves as one of the Commonwealth of Massachusetts' thirteen (13) Regional Planning Agencies and Metropolitan Planning Organizations (MPO). An MPO consists of a Committee of Signatories, who together make decisions about transportation planning goals, projects, priorities, and funding. In Franklin County, this group is referred to as the Franklin County Transportation Planning Organization (TPO). In its role as TPO member, the FRCOG follows federal transportation planning regulations, including the establishment of a citizen advisory group to participate in transportation planning activities. The FRCOG staff is responsible for coordinating and working with the other TPO members to develop, implement, and routinely update the Regional Transportation Plan

for Franklin County, as well as provide a wide range of other planning services.

For clarity, it is important to note that "Franklin County" as a governmental entity no longer exists; the RTP refers geographically to the 26 towns in our region as "Franklin County." References to "Franklin County" throughout this document should be interpreted as meaning the collective group of the 26 towns. Reference to the FRCOG will mean the entity providing the services and serving as a regional government.

The Franklin County TPO is governed by a Memorandum of Understanding (MOU) that was executed in 2006 and updated in 2010. As defined by the MOU, the TPO's committee membership contains nine members including the following representatives:

- The Secretary of the Massachusetts Department of Transportation (MassDOT) (to act as the Chair of the FCTPO);
- The Administrator of the Highway Division of MassDOT;
- The Chair of the Franklin Regional Council of Governments Executive Committee;
- The Chair of the Franklin Regional Transit Authority;
- The Franklin Regional Council of Governments Regionally Elected Official;
- The Mayor of Greenfield; and
- Three Franklin County Sub-Regional Appointments (one from the West County, one from Central County, and one from the East County sections of Franklin County as defined in the MOU).

The MOU defines that the FCTPO shall have the responsibilities of developing, reviewing, and adopting the region's annual transportation Unified Planning Work Program, the Regional Transportation Plan, the Transportation Improvement Program, and air quality conformity determinations. The MOU further states that the FCTPO shall have the responsibility of meeting all of the provisions of the federal 3C (Continuing, Cooperative, Comprehensive) Transportation Planning Process that may include: the initiation of studies, evaluation and recommendation of transportation improvements,

and the programming of funds for transportation projects in the region for which funding is sought for implementation. The MOU also states the FCTPO shall be the forum for cooperative decision-making by officials of local government, regional planning commission, regional transit authority, and state officials representing state transportation agencies.

The MOU defines that the Franklin Regional Planning Board (FRPB) will act as an advisory board to the FCTPO in order to ensure that all transportation decisions are considered within the context of comprehensive regional planning. The composition of the FRPB includes a Select Board and Planning Board member designee from each town as well as 18 at-large members. The FRCOG is, by state designation and consistent with applicable federal transportation laws, the primary transportation planning staff for the FCTPO and also serves as the principal source of transportation planning for local and regional transportation projects.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)

The federal legislation that guides transportation planning (including Regional Transportation Plans) and projects is called the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). On August 10, 2005, President George W. Bush signed SAFETEA-LU into law as the latest federal transportation legislation. SAFETEA-LU has guaranteed funding for highways, highway safety, and public transportation. It represents the largest surface transportation investment in our Nation's history. SAFETEA-LU replaced two previous landmark federal transportation legislations: the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Transportation Equity Act for the 21st Century (TEA-21) enacted in June of 1998. ISTEA revolutionized the planning and funding of highway and mass transit construction, maintenance, and operations throughout the United States. TEA-21 confirmed the federal government's commitment to establish a nationwide transportation system that reflects the country's environmental, social, and energy goals. SAFETEA-LU builds on the foundation of these two previous acts by supplying the funds and refining the programmatic framework for

investments needed to maintain and further develop the country's transportation infrastructure.

SAFETEA-LU addresses the many challenges facing our transportation system today, such as improving safety, reducing traffic congestions, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment, as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective Federal surface transportation programs by focusing on transportation issues of national significance, while giving State and local transportation decision makers more flexibility for solving transportation problems in their communities.¹ It also elevated alternative forms of transportation like bicycling and walking to the level of legitimate transportation modes. This Regional Transportation Plan was developed with the framework and focuses of this transportation legislation in mind.

The SAFETEA-LU legislation was supposed to expire in September of 2009, but has been extended by Congress while they work to create a new long-term surface transportation program. SAFETEA-LU is presently being funded at current levels, but the funding levels in the future subsequent legislation are uncertain and could be lower. This may affect the timeliness of delivering projects that address regional transportation priorities.

The Regional Transportation Plan

SAFETEA-LU requires that each MPO complete a regional transportation plan and update it at least every four years. SAFETEA-LU further specifies that:

"...the Plan and TIPs for each metropolitan areas shall provide for the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways and bicycle transportation facilities) that will function as an intermodal transportation system for the metropolitan planning area and as an integral

¹ United State Department of Transportation, Federal Highway Administration, *A Summary of Highway Provisions in SAFETEA-LU*, FHWA website, <http://www.fhwa.dot.gov/safetealu/summary.htm>. 2005.

part of an intermodal transportation system for the State and the United States.”

In summary, a Regional Transportation Plan is a planning document that details existing conditions, identifies present deficiencies, and projects future needs related to transportation systems for a particular geographical area. The RTP reviews all types of transportation, including vehicular, rail, air, bus, bicycle, and pedestrian. The RTP is intended to provide the basis for regional transportation planning activities and is updated at least every four years. The update is intended to provide an opportunity to review and update transportation priorities within the region. The Regional Transportation Plan is required to forecast the transportation needs of the region for the next

twenty-five years (the year 2035 for this plan) and it is required to do so in the context of financial constraint.

The recommendations in the Franklin Regional Transportation Plan provide the framework for transportation projects in the county. It is from this list of recommendations that projects are chosen to be designed, funded, and implemented. Historically, the region has been very successful with the rate at which the RTP’s recommendations have been implemented. Table 1-1 shows that out of the twenty recommendations from the previous 2007 Regional Transportation Plan, five have already been completed and another nine are in progress or are nearly completed.

Table 1-1: Top 20 Recommendations from 2007 Regional Transportation Plan*

	Recommendation	Status	Notes
1	Implement I-91 Intelligent Transportation System (ITS) Fiber and Conduit Installation	Completed	
2	Implement Route 116 Sunderland Safety Improvements	Completed	The physical improvements will be monitored for several additional years to determine efficacy.
3	Construct I-91/Route 2 Rotary Safety and Pedestrian Improvements	Completed	
4	Construct Northfield Streetscape and Safety Improvements	Completed	This project has been split into 2 projects. The Streetscape portion has been completed.
5	Rehabilitate Route 2 Bridges in Charlemont	Completed	
6	Acquire Scenic Easements along Designated Scenic Byways	In Progress	\$2.2 million has been or will be spent on acquiring scenic easements. This project will remain ongoing.
7	Construct a Park-and-Ride Lot near I-91 exit 24 in Whatley	In Progress	This project has been programmed for 2011 in the FC TIP using CMAQ funds.
8	Rehabilitate the Gill-Montague Bridge	In Progress	Construction is underway.
9	Advance Route 2 Safety Improvements in Ervingside, Farley, Erving Center, and Gill/Greenfield	In Progress	Improvements have been completed in Ervingside and Farley and under design for Gill/Greenfield.
10	Plan for Passenger Rail from Franklin County to Boston	In Progress	Monitoring of rail planning efforts are ongoing.
11	Expand Bus Service throughout the county along Route 2 (east and west) and along Routes 5/10	In Progress	Bus service has been expanded along Rt. 2 west. A study is underway to expand it along Rt. 5/10.
12	Initiate Passenger Rail service from New Haven, CT to St. Albans, VT with a stop in Greenfield	In Progress	Stimulus funding has been awarded and construction underway.
13	Implement Safety and Traffic Flow Improvements along Route 2 between the I-91/Route 2 Rotary and Home Depot in Greenfield	In Progress	Traffic study completed in 2009 recommending possible improvements.
14	Construct the Franklin Regional Transit Center	In Progress	Construction is underway and should be completed in January 2011.
15	Rehabilitate the General Pierce Bridge	Not yet started	Rehabilitation of the Gill-Montague Bridge must be completed first.
16	Construct Route 2 West Safety Improvements including protected turn lanes at Colrain-Shelburne Road and South Maple Street in Shelburne, and Traffic Calming in Charlemont Village Center.	Not yet started	Preliminary feasibility study has been completed.
17	Construct a Bikeway to connect the downtowns of Orange and Athol	Not yet started	Preliminary feasibility studies have been completed.
18	Realign I-91 Northbound Exit 24 Ramp	Not yet started	
19	Serve as a Leader in Promoting Alternative Fuel Fleet Conversion	Not yet started	
20	Construct a Climbing Lane along Route 2 up Greenfield Mountain	Not yet started	Preliminary feasibility study has been completed.

*Projects are not listed in any order of priority.



Public Participation Process

2 Public Participation Process

Federal transportation legislation requires that each metropolitan planning organization prepare and/or update a transportation plan every four years. The legislation also mandates that an inclusive participation process be completed as part of the plan's development. The latest iteration of the federal transportation legislation, SAFETEA-LU, has placed particular emphasis on the public participation process. Specifically, it calls for increased interagency consultation, the use of visualization techniques in the public participation process, and outreach to organizations and groups that are impacted by transportation issues. This chapter describes the public participation process that the FRCOG and the FCTPO used in the development of this RTP.

Public participation is a required component of the Regional Transportation Plan.

Public Participation Requirements of SAFETEA-LU

SAFETEA-LU requires that the Regional Transportation Plan be developed in consultation with the State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. The legislation further states that consultations with these agencies should take into account plans, maps, and inventories of natural and/or historic resources as available and applicable. In addition, SAFETEA-LU states that the planning process used by the metropolitan planning organization (MPO) should serve to promote consistency between transportation improvements and State and local planned growth and economic development patterns. The MPO for the Franklin County region is the Franklin County Transportation Planning Organization (FCTPO).

SAFETEA-LU also specifies that:

"...each MPO shall provide citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight services, private providers of transportation, representatives of users of public transportation, representatives of the disabled and other interested parties with a reasonable opportunity to comment on the transportation plan."

The legislation notes that the public participation process associated with the development of the plan shall be developed in consultation with all interested parties and allow all interested parties a reasonable opportunity to comment on the contents of the transportation plan, and to the maximum extent practical, should include the following as a part of that task:

- Hold any public meetings at convenient and accessible locations and times;
- Employ visualization techniques to describe the transportation plan;
- Make public information available in electronically accessible format and means, such as the World Wide Web, as appropriate to afford reasonable opportunity for consideration of public information.

The Franklin County Transportation Planning Organization and the FRCOG's Continuing, Cooperative, and Comprehensive (3C) Transportation Planning Process

The Franklin Regional Council of Governments receives federal funds to conduct regional transportation planning on behalf of the Franklin County Transportation Planning Organization (FCTPO) and is therefore required by law to carry out a continuing, cooperative, and comprehensive (3C) transportation planning process. This process depends on significant public involvement, and requires that all plans and programs consider all modes of transportation and support community development and social goals.

The FCTPO is responsible for monitoring the progress of the regional transportation planning

processes and making the final decision regarding any regionally significant projects to be included in the Regional Transportation Plan.

Public Outreach and Input during the Development of the Regional Transportation Plan

Public input is an essential component in the creation of the Franklin County Regional Transportation Plan. The input FRCOG received as part of its outreach efforts helped shape and inform the RTP's goals, priorities, and recommendations. The RTP is a public document that was reviewed throughout its development by all levels of government including: the FCTPO; the Franklin Regional Planning Board (FRPB); the local communities; representative of regional, state, and federal agencies; and organizations and members of the public representing a wide array of interests. This section describes the public outreach and participation efforts conducted by the FRCOG staff.

Initial Public Outreach

At the beginning of the update process for the Regional Transportation Plan, the FRCOG developed a public participation strategy that sought to obtain public input from as many and diverse populations as possible. The strategy included hosting public forums, distributing several surveys, and attending stakeholder meetings. Four public forums were held between January and March of 2010. The first three forums were held in the evening at locations throughout the county to facilitate public access to the meetings. The fourth public forum was held during the day in order to allow people who could not be present for the evening meetings to be able to attend and provide their input. The details for these meetings can be seen in Table 2-1.

At all of these forums the update process was explained, examples of past Regional Transportation Plans were provided, and visual aids (PowerPoint presentation, pictures, and maps) were used to augment the discussion. The forums were announced several weeks prior with ads placed in all of the local newspapers and the FRCOG newsletter and website. Radio ads were also aired prior to each forum (three times a day for four days prior to each forum). In addition, personal invitations were sent to

a wide array of stakeholders announcing the Regional Transportation Plan update and the dates of the forums. Included in the invitees were representatives of land use management, natural resources, environmental protection, conservation, and historic preservation agencies see Appendix A for a list of stakeholders that were contacted and those that attended). To further ensure that as many stakeholders as possible were provided the opportunity to comment on transportation in Franklin County, FRCOG staff also attended many meetings of various organizations throughout the region and made presentations regarding the update process and asked for project ideas and feedback. In addition, the FRCOG staff discussed the plan informally when meeting with town boards and local and regional organizations to solicit further input regarding the update or ideas for transportation projects in the county. The complete list of all meetings and their dates are listed in Table 2-1 below.

To augment the input received from the public forums, the FRCOG also created two surveys about transportation issues within the county. The first survey was geared towards a general audience, while the second survey was distributed to all of the major employers within the county to understand better the freight and commercial aspect of transportation in the region. The surveys can be viewed in Appendix B. The surveys were advertised in all of the local newspapers, town newsletters, on the FRCOG website, the FRCOG newsletter, and through personalized letters to many organizations representing major stakeholders in the county. The surveys were available both in an online format and in hardcopy. Hardcopies of the survey were distributed to all town halls in the county, were placed on all of the FRTA buses, and were available upon request.

The general survey that the FRCOG distributed looked to capture several specific pieces of information. Namely, survey respondents were asked: to rate the state of the existing transportation infrastructure; whether they used park & ride lots; to describe their current daily travel modes and routines; and what their top three recommendations

would be for transportation improvements in the region over the next five to ten years. The FRCOG received 98 completed surveys from county residents and used the information provided in the surveys throughout this RTP.

The FRCOG created the Major Employer Survey with the intent of better understanding the commercial aspect of transportation in the county – specifically freight transport and commuting of employees. With the assistance of the Franklin County Chamber of Commerce, this survey was distributed to all of the major employers or manufacturers in Franklin County and several just outside of the county that were significant employers of county residents. The survey looked to determine: how these companies transported their goods; if they were interested in utilizing rail transport, if possible; whether employees were able to carpool or use public transit; and what recommendations the companies might have for transportation projects over the next five to ten years. FRCOG received 23 completed surveys and used the information in several chapters of this RTP.

Throughout the update of this Regional Transportation Plan, draft chapters were made available for review on the FRCOG website (www.frcog.org) under “Publications” and “Transportation Planning.” In addition, information regarding the update was regularly posted in the FRCOG newsletter, which is mailed to town departments (Selectboards, Town Administrators, Highway Superintendents, Town Clerks, Planning Boards, Police Chiefs, Health Agents), legislators, and other regional agencies.

Final Public Outreach and Approval Process

Once the FRCOG staff had completed a draft of the 2012 Regional Transportation Plan, public input was sought from a variety of stakeholders as well as those required by SAFETEA-LU during a 30-day public review and comment period between August 8 and September 9, 2011. The draft RTP was made available for public review through a variety of means, including: press releases and legal notices to local media, mailings to stakeholders and interested individuals/ agencies/ organizations, notices in the FRCOG newsletter, and posting of the draft on the

FRCOG website. In addition, a public meeting was held on September 7, 2011 in the centralized location of Greenfield to directly obtain public input regarding the draft RTP. Visual aids, such as a PowerPoint presentation, maps, and photographs were used during this meeting to help attendees visualize the RTP and its recommendations.

As part of this outreach, the FRCOG received few substantial comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP during its preparation (all comments received can be seen in Appendix A). Following the official FCTPO Public Participation Plan’s requirements of a minimum thirty-day review period, the FCTPO endorsed the 2012 Regional Transportation Plan by vote, following an official report and discussion, at a meeting open to the public at large.

Environmental Justice and Title VI

In 1994, a Presidential Executive Order directed every federal agency to make Environmental Justice part of its mission by identifying and addressing the effects of all programs, policies, and activities on “minority populations and low-income populations.” The U.S. Department of Transportation has addressed this directive by involving the potentially affected public in developing transportation projects that fit harmoniously within their communities without sacrificing safety and mobility. This initiative recognizes that effective transportation decision-making depends upon understanding and properly addressing the unique needs of different socioeconomic groups. Title VI is a section of the Civil Rights Act of 1964 prohibiting discrimination based on race, color, or national origin. All federally-financed programs must ensure that people of all race, color and ethnicities be able to participate fully in the public participation process.

The Franklin Regional Transportation Plan has identified a number of goals in support of Environmental Justice and Title VI. There is a commitment that transit planning and programming within the region are nondiscriminatory and that all segments of the Franklin County population are able to participate fully in regional transportation planning processes and to access transportation

Table 2-1: RTP Public Participation Outreach Schedule

Date	Type of Meeting	Audience	Location
January 6, 2010	Franklin County Transportation Planning Organization	Representatives of MassDOT Transportation Planning, MassDOT Highway Division, the Franklin Regional Council of Governments Executive Committee, the Franklin Regional Transit Authority (FRTA), and the Franklin Regional Planning Board (FRPB), other persons and representatives with an interest in transportation issues.	Greenfield
January 19, 2010	Regional Transportation Plan Public Forum	Attendees included representatives from: FRTA, Community Transit Services, Greening Greenfield, and others interested in transportation issues.	Greenfield
January 26, 2010	Regional Transportation Plan Public Forum	Attendees included representatives from: FRTA, the rail freight industry, Shelburne Council of Aging, and others interested in transportation issues.	Shelburne
February 4, 2010	Greater Franklin County Comprehensive Economic Development Strategy (CEDS) Committee	CEDS Committee Members (Each town in Franklin County has a town-appointed representative on the Committee. Also serving on the Committee are appointees of the FRCOG Executive Committee, the Franklin County Selectmen's Association, and North Quabbin Chambers of Commerce, the Franklin County Community Development Corporation (CDC), and the FRPB.	Greenfield
February 11, 2010	Regional Transportation Plan Public Forum	Attendees included representatives from: Ridebuzz.org, FRTA, Montague Catholic Social Ministries, and others interested in transportation issues.	Erving
March 17, 2010	Regional Transportation Plan Public Forum	Attendees included: town administrators, town highway superintendents, MassDOT, FRTA, Franklin Land Trust, Franklin County CDC, Franklin County Resource Network	Greenfield
March 25, 2010	Franklin Regional Planning Board	Attendees included Franklin Regional Planning Board members, local officials, and members of the general public	Greenfield
April 22, 2010	Franklin Regional Planning Board	Attendees included: Franklin Regional Planning Board members, local officials, and members of the general public	Greenfield
April 29, 2010	Franklin County Chamber of Commerce	Attendees included: Chamber Board members, local businesses, and local officials	Greenfield
April 29, 2010	FRCOG Regional Council	Attendees included: Council members that represent all 26 towns in Franklin County	Greenfield
April 29, 2010	Franklin County Selectmen's Association	Attendees included: current and former town officials from Franklin County towns	Greenfield
June 22, 2010	Franklin County Transportation Planning Organization	Representatives of MassDOT Transportation Planning, MassDOT Highway Division, the Franklin Regional Council of Governments Executive Committee, the Franklin Regional Transit Authority (FRTA), and the Franklin Regional Planning Board (FRPB), other persons and representatives with an interest in transportation issues.	Greenfield
September 7, 2011	Public Meeting to review Draft Plan	Attendees included: FRTA, Greening Greenfield, and others interested in transportation issues.	Greenfield

facilities and services, including transit facilities and services.

Beginning in 2001, the Franklin Unified Planning Work Program (UPWP) has had a specific task for Environmental Justice and Title VI-related activities. The work under this task has focused on the following:

- Analyzing and mapping U.S. Census Bureau data on income and race in order to identify Environmental Justice target areas that have the greatest concentration of minority populations and residents living below the poverty level;
- Reviewing current transit routes and the level of service for the Franklin County region, especially in the identified Environmental Justice target areas, and working with the regional transit agencies to find ways to maintain and improve transportation services in the region, as funding allows;
- Conducting outreach to low-income and minority populations and community organizations to identify unmet transportation needs among these groups and develop strategies for addressing them; and
- Reviewing and strengthening current transportation planning and decision-making processes to increase the representation of low-income and minority residents.

Using 2000 U.S. Census data, FRCOG staff identified 10 Environmental Justice target areas. They are: Greenfield (town center), Greenfield (Leyden Road and Plain Road areas), Greenfield (area south of Main Street), Montague (Millers Falls), Montague (downtown Turners Falls), Orange (towns center), Orange (area west of Route 122 and near the airport), Shelburne Falls (Shelburne side), Sunderland (entire town), and Wendell (entire town).

After identifying the Environmental Justice target areas, staff conducted a review of the current transit services in the region to determine if the Environmental Justice target areas have a higher or lower level of transit service compared to the region as a whole. It was determined that in many aspects, the populations within the Environmental justice target areas are better served by the existing transit system than Franklin County residents as a whole.

However, while the Environmental Justice target areas have some of the best transit access in the region, the level of service is still in need of improvement. For example, there is no evening or weekend fixed-route transit service to any of the target areas, and the Environmental Justice target area that covers the town of Wendell currently has no fixed-route transit service at all.

The Environmental Justice (EJ) target areas have been the focus of the FCTPO's EJ initiatives and the FCTPO has worked to increase representation of these EJ populations in the public participation and transportation planning processes. The primary method that has been used to contact these populations has been through outreach to social service agencies and organizations that serve low-income and/or minority residents within Franklin County.

Since 2001, FRCOG staff has conducted several studies, surveys, and outreach efforts as a means to determine information about EJ populations in the county and their needs. The FRCOG has also worked with the local towns and Councils on Aging to assess and address the transportation needs of elderly residents. As part of public outreach for this update, FRCOG staff made special efforts to ensure that social service agencies, Councils on Aging, and other representatives of the EJ populations were contacted and participated in the update process (see Appendix A for a list of organizations that took part in the update).

Consideration of Environmental and Land Use Issues

During the update to the 2012 Regional Transportation Plan, the FRCOG considered a wide range of issues and incorporated these factors throughout the RTP and its recommendations. These issues included: environmental, land use, historic preservation issues, and local and regional priorities and concerns. For all of the public forums and meetings that the FRCOG held regarding the Plan update, the FRCOG staff sent personal invitations to organizations representing these various interests to ensure that their input was included. Invitees included: regional land conservation trusts, watershed protection groups,

the Massachusetts Historic Commission, the Franklin County Development Corporation, and others. Most of these groups attended the public outreach forums and shared their thoughts regarding the relationship between transportation and land use. This input was included in the drafting of the RTP.

In addition, when preparing the RTP the FRCOG considered land use and environmental issues and the consistency between transportation planning and other planning activities, through its dual role as the staff for the Transportation Planning Organization (TPO) and as the Regional Planning Agency (RPA) for the Franklin County Region. As the RPA for the Franklin Region, the FRCOG has statutory responsibility for the coordinated and orderly development of the region, including regional growth planning and transportation planning. The RPA staff overlap with the TPO staff, with most FRCOG transportation staff involved in planning activities beyond transportation. The RPA works with towns, regional organizations, and State agencies on land use, open space, and natural resource planning, and assists towns with zoning revisions and redevelopment projects. For example, the FRCOG has been the lead consultant for Community Development Plans for fourteen of the twenty-six towns in Franklin County and assisted with seven other towns in the county. The FRCOG has also worked on four municipal Master Plans, fourteen open space and recreation plans, the Deerfield River Watershed Open Space Plan, the Franklin County Regional Water Supply Study, watershed assessment plans, scenic byway corridor management plans, regional economic development plans, and the Pioneer Valley Clean Energy Plan, among others. The FRCOG has also assisted a number of towns with zoning revisions to support smart growth development patterns. These activities all influence the FRCOG's transportation planning processes and the FRCOG works to ensure consistency between its transportation planning and other planning activities.

Interagency Consultation

As part of SAFETEA-LU requirements, this RTP was updated in consultation with local and state agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. In addition, the twenty-six

municipalities in Franklin County were consulted at many stages of the update process. Personalized invitations were sent to the following agencies and organizations for the initial public outreach and the draft RTP was made available for review and comment.

Coordination with Local Agencies

The FRCOG works with many local agencies routinely not only for transportation issues, but also on land use, environmental, and economic development issues. The FRCOG provides technical assistance to the Franklin County towns and works as partners with many local organizations and agencies. This work ranges from performing traffic counts, to identifying and preparing local grant applications, to creating a wide assortment of planning documents (as mentioned in the last section). The local agencies that were consulted in the update of this Plan include:

- All twenty-six municipalities in Franklin County
- Franklin Regional Transit Authority
- Franklin Regional Housing and Redevelopment Authority
- Community Transit Services
- Mount Grace Land Conservation Trust
- Franklin Land Trust
- Franklin County Community Development Corporation
- Franklin County Resource Network
- Connecticut River Watershed Council
- Councils on Aging

Coordination with State and Federal Agencies

As part of its routine work, the FRCOG also works with a number of state and federal agencies. This is especially true since the vast majority of Franklin County's transportation (and other) projects are funded by the state and federal government.

The state and federal agencies that were consulted in the update of this RTP include:

- Massachusetts Department of Conservation and Recreation
- Massachusetts Historical Commission
- MassDOT, Highway District 1 and 2 and Office of Transportation Planning

- MassDOT Rail Division and MassDOT Transit Division
- Massachusetts Department of Housing and Community Development (DHCD)
- Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA)
- Massachusetts Department of Environmental Protection
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- Federal Railroad Administration (FRA)
- Federal Aviation Administration (FAA)

3



Transportation Planning Goals

2012

REGIONAL TRANSPORTATION PLAN

3 Transportation Planning Goals

The following goals were identified through an extensive public outreach process and have been the guiding concepts for transportation planning in Franklin County for the last ten years. During this update, these goals were again validated through public outreach, including surveys and public forums.

➤ **Enhance the mobility of people and goods traveling to, from, and through Franklin County.**

Ensure that people, goods, and freight are able to travel freely and efficiently and that intermodal transportation options are available. The road and bridge improvements recommended in this RTP will help ensure high-quality mobility in the region.

➤ **Ensure that the transportation planning process is inclusive and objective.**

Continue to expand outreach activities to public stakeholders and special needs populations. Include consideration of the objective evaluation criteria and financial constraints in decision-making and the prioritization of future projects. It is important that all voices are heard during the planning process so that the transportation needs of all residents are met.

➤ **Improve transportation safety.**

Ensure that Franklin County roadways, bridges, railroads, airports, and other transportation facilities are safe. Safety improvement projects have, and will continue to have, priority in the region. The recommendations in this RTP have been evaluated on this basis.

➤ **Promote economic development.**

Enhance and encourage economic development by creating a safe, efficient,

comprehensive, intermodal, and multimodal transportation network.

➤ **Maintain rural character.**

Ensure that transportation improvements are designed and constructed to enhance mobility while maintaining the historic and rural character of roadways, bridges, and communities. The scenic nature of the county helps contribute to the region's economic development through the tourism and recreation industries. The recommendations regarding Franklin County's scenic byways help preserve and promote this rural and scenic character.

➤ **Support the preservation of existing transportation infrastructure.**

Promote cost-effective policies that encourage the upgrading and maintenance of current transportation facilities over new construction. Many of the recommendations of the RTP, particularly the Pavement Management System, promote the maintenance of the current transportation infrastructure.

➤ **Enhance the security of the transportation network.**

Promote increased security at transportation facilities, and expand the region's ability to protect the transportation network from potential hazards and threats. This will become more important in the future as a result of climate change and its related natural hazard threats such as the potential of increased flooding.

➤ **Encourage integrated planning activities that support sustainable development patterns.**

Recognize and support the link between an efficient multimodal transportation network and balanced sustainable land development. A more sustainable transportation system benefits not only the region's environmental health, but also provides economic benefits to

residents as they drive less or use more affordable means of transportation.

➤ **Eliminate and/or mitigate environmental degradation due to construction, repair, maintenance, or use of transportation facilities.**

Ensure that water quality and soil stability and integrity are not compromised by the provision or existence of transportation facilities.

➤ **Promote transportation activities and technologies which conserve energy and reduce travel congestion and vehicle emissions.**

Support commute options, alternative fuel use, Intelligent Transportation Systems (ITS) infrastructure, and other means of reducing motorized vehicle usage and greenhouse gases. Many projects have already been implemented or begun that work towards this goal. There are also many recommendations in this RTP that further this effort.

➤ **Provide and preserve access to natural, scenic, cultural, and historic resources.**

Ensure that the general public has access to public water bodies, natural resource areas, historic structures, and scenic and cultural resources. It is also important that all members of the general public have equal access to these resources.

The Transportation Improvement Program (TIP) is a prioritized, four-year program for implementation of transportation improvement projects in Franklin County that receive federal funds. It is updated annually and is adjusted to the changing fiscal environment, but always reflects the RTP's goals and priorities. The Unified Planning Work Program (UPWP) is also an annual document that describes the work tasks to be conducted during the year by the transportation planning staff of the FRCOG on behalf of the FCTPO. Like the TIP, the UPWP is based upon the priorities that have been identified in the RTP and work towards implementing those goals.

The recommendations found in this RTP all work towards the realization of these goals. They will be implemented through coordinated regional planning and, in part, specifically through the Franklin County Transportation Planning Organization's (FCTPO) Transportation Improvement Program (TIP) and its Unified Planning Work Program (UPWP). These shorter-term planning documents reflect the priorities of the Regional Transportation Plan, while guiding how and when projects should be implemented within the financial constraints of anticipated Federal and State Funding.



Regional Demographic and Economic Profile

4 Regional Demographic and Economic Profile

Understanding Franklin County's current and future demographic, socioeconomic, and land use patterns are necessary to effectively plan for the region's transportation needs. Chapter 4 examines in detail the current population and economic conditions of the county in order to determine any transportation issues that should be addressed. Chapter 4 also looks to the future and examines projected population and job growth with the intent of anticipating future transportation demands and needs.

Franklin County is the most rural county in the Commonwealth of Massachusetts. It is located in the northernmost portion of the Connecticut River Valley of Western Massachusetts. It borders both Vermont and New Hampshire. Franklin County also borders the Massachusetts counties of Hampshire to the south, Berkshire to the west, and Worcester to the east.

Franklin County has a population of 71,372 and a population density of 98 people per 100 square miles in its 725 square mile area. The majority of the twenty-six towns in the county are very small – averaging approximately 1,400 residents. The largest municipality, and only city, is Greenfield with a population of 17,456 people. Ninety percent of the

housing stock in Franklin County is owner-occupied, of which 60 percent are in the form of single-family homes (U.S. Census Bureau, 2008).

The landscape in Franklin County is predominately open space, forest, and farmland. The soils in the Connecticut River Valley are ideal for agricultural uses, and consequently, the region has a rich agricultural history, which has helped it avoid the national trend of suburbanization in recent years. As of 2005, 77 percent of the land in the county is forested and another 8 percent is composed of farmland. The remaining lands are mainly residential (4%), open space (2.2%), and commercial/industrial (0.5%) (MassGIS 2005).

Regional Demographics

Population

To better assess the transportation needs of the region, it is necessary to understand how the population in Franklin County is changing – whether it is growing or decreasing, aging or getting younger, or even becoming wealthier or poorer. Between 1970 and 2000, the county's population grew by 20 percent, an increase of 12,300. Much of this growth took place during the 1970's and 1980's. Following the trend of slower growth that began in the 1990's, the county actually lost a small amount of population (163 people) between 2000 and 2010, resulting in a total population of 71,372 in 2010 (a growth rate of -0.2%). Table 4-1 shows the change in population

Between 1970 and 2000, the county's population grew by 20 percent.

Table 4-1: Population for Franklin County and other Western Massachusetts Counties, 1970 to 2000

Geography	1970 Population	1980 Population	1990 Population	2000 Population	1970-2000	
					Change	Percent Change
Franklin County	59,233	64,317	70,092	71,535	12,302	20.8%
Berkshire County	149,407	145,110	139,352	134,953	-14,454	-9.7%
Hampden County	459,050	443,018	456,310	456,617	-2,433	-0.5%
Hampshire County	123,997	138,813	146,568	152,251	28,254	22.8%
Worcester County	638,114	646,352	709,705	750,963	112,849	17.7%
Massachusetts	5,689,170	5,737,037	6,016,425	6,349,097	659,927	11.6%

Source: U.S. Census Bureau - 1970, 1980, 1990, and 2000 Census of Population & Housing.

between 1970 and 2000, while Table 4-2 illustrates the more recent change in the last decade. These tables also show how Franklin County's population growth compares with its surrounding counties during those time periods.

The population growth that occurred between 2000 and 2010 in Franklin County primarily occurred in the towns located on the northern and eastern edges of the region (see map at the end of this chapter), with a few exceptions. These towns most likely grew the most during this time period because they have the most developable land remaining for construction of new homes in the county and are also located close to the larger employment centers in Worcester and Hampshire Counties. The towns that lost the greatest amount of population are mainly located in the central portion of Franklin County, where the majority of the jobs are located. This could reflect the trend of declining job opportunities in these communities. Table 4-3 lists the population change and percentage change for each town during the last ten years (note: it is important to examine both raw change and percent change as many of the towns have such small populations that a percent change can exaggerate total population increases or decreases).

Age Distribution of the Population

For transportation planning, it is important to know not only the size of a region's population, but also its composition by age group and how that may change over time. As people age, their use of the transportation network tends to change. For example, school children and the elderly are less likely to drive by themselves and are more likely to use public transit. In addition, the number of adult workers in a region affects peak traffic volumes as they commute to their workplaces.

Like much of the nation, Franklin County is getting gradually older as the "Baby Boomer" generation ages. Figure 4-1 shows that almost half (45%) of the Franklin County population is currently aged 45 and older. Of that, 15 percent is aged 65 and older. The

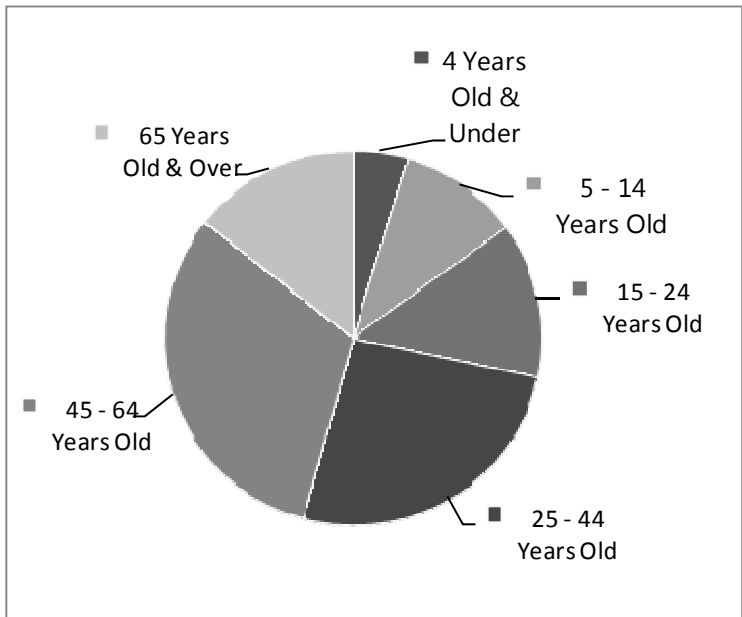
Table 4-2: Estimated Population for Franklin County and other Western Massachusetts Counties, 2000 to 2010

Geography	2000 Census Population	2010 Census Population	2000-2010	
			Change	Percent Change
Franklin County	71,535	71,372	-163	-0.2%
Berkshire County	134,953	131,219	-3,734	-2.8%
Hampden County	456,617	463,490	7,262	1.6%
Hampshire County	152,251	158,080	5,829	3.8%
Worcester County	750,963	798,552	47,589	6.3%
Massachusetts	6,349,097	6,547,629	198,532	3.1%

Sources: U.S. Census Bureau - 2000 Census of Population & Housing; U.S. Census Bureau - 2010 Redistricting Summary Data, released March 2011.

age group of 65 and older is one of the most likely to rely on public transportation for daily travel. Not only would this group benefit from an efficient bus system, but would also be greatly assisted by other forms of public transit, such as taxis and senior citizen van services.

Figure 4-1: Franklin County Age Distribution, 2008



Source: U.S. Census Bureau - 2008 Populations Estimates, released July 2009.

The region is expected to see a significant increase in the number of elderly residents over time. The "Baby Boomer" generation (born 1946 to 1964) will be reaching 65 years old as this RTP is published in 2012, and reach 75 years old in 2021. Studies have shown that nationally, over 40 percent of people age

75 and above are non-drivers.¹ As a result, it will be important to provide transportation services, including public transit and paratransit/van services for Franklin County's expanding elderly population.

Other age groups of interest for transportation planning are 25 to 44 years old and 45 to 65 years old. These age groups comprise the bulk of the workforce, and typically make their trips to and from work during the peak morning evening commute hours. It is important that the regional transportation network has sufficient capacity to accommodate commuting travel. The 2006-2008 American Community survey showed that 88 percent of Franklin County residents commute to work by car (with 72% driving alone and 8% carpooling), 4 percent walked, and 1 percent took a taxi, motorcycle, or bicycle. Traffic congestion during commuting hours can be addressed in part through provision and promotion of alternatives to single occupancy vehicle travel for work commutes. Alternatives could include the use of park and ride lots for carpooling or transit, ridesharing programs, and bicycle and pedestrian facilities. Congestion can also be influenced through flexible work schedules and through the provision of telecommunications infrastructure that helps support residents who work from their homes. In 2008, approximately 5.2 percent of Franklin County residents worked at home.

¹ Straight, A., *Community Transportation Survey*, America Association of Retired People, 1997.

Table 4-3: Population Change for Franklin County Towns, 2000 to 2010

Geography	2000 Census Population	2010 Census Population	2000-2010	
			Change	Percent Change
Deerfield	4,750	5,125	375	7.9%
Erving	1,467	1,800	333	22.7%
Orange	7,518	7,839	321	4.3%
Leverett	1,663	1,851	188	11.3%
Gill	1,363	1,500	137	10.1%
Conway	1,809	1,897	88	4.9%
Northfield	2,951	3,032	81	2.7%
New Salem	929	990	61	6.6%
Rowe	351	393	42	12.0%
Warwick	750	780	30	4.0%
Monroe	93	121	28	30.1%
Hawley	336	337	1	0.3%
Bernardston	2,155	2,129	-26	-1.2%
Shutesbury	1,810	1,771	-39	-2.2%
Montague	8,489	8,437	-52	0.6%
Leyden	772	711	-61	-7.9%
Ashfield	1,800	1,737	-63	-3.5%
Whately	1,573	1,496	-77	-4.9%
Buckland	1,991	1,902	-89	-4.5%
Charlemont	1,358	1,266	-92	-6.8%
Sunderland	3,777	3,684	-93	-2.5%
Heath	805	706	-99	-12.3%
Wendell	986	848	-138	-14.0%
Colrain	1,813	1,671	-142	-7.8%
Shelburne	2,058	1,893	-165	-8.0%
Greenfield	18,168	17,456	-712	-3.9%
Franklin County	71,535	71,372	-163	-0.2%

Sources: U.S. Census Bureau – 2000 Census of Population & Housing; U.S. Census Bureau – 2010 Redistricting Summary Data, released March 2011.

Ethnic and Racial Diversity

Due to its rural nature and location far from major urban centers, Franklin County is the least racially and ethnically diverse county in the Commonwealth. As of 2010, the U.S. Census Bureau shows that approximately 94 percent of the population in the county is White. This is compared to a Massachusetts percentage of 80 percent that is White. The remaining 6 percent of the population in Franklin County is split predominately between Black (1.1%) and Asian (1.3%), with a very small percentage (0.3%) that is Native American/Alaska Native. Hispanics make up the largest minority in Franklin

County at 3.2 percent.² The racial and ethnic composition of the population has remained fairly stable since 2000, although the Hispanic population has increased slightly from 2 percent of the total population in 2000.

While Franklin County may not have a large population of minorities or ethnicities, it is committed to the principles of Environmental Justice and to ensuring that all segments of the population are able to fully participate in its transportation planning processes and that they all have decent access to transportation facilities and services. As part of the Environmental Justice analysis that was completed in 2000, the towns with the largest total minorities (300 or more people) were identified to ensure that they were receiving equitable transportation services. Those towns are: Greenfield, Montague, Sunderland, and Orange. The greatest percentage of minorities as a fraction of a town's total population are Sunderland (13% minority), Greenfield (8%), Wendell (8%), Shutesbury (8%), Montague (6%), Charlemont (6%), and Orange (5%). (Note: due to U.S. Census data limitations, 2000 is the most recent year for which this data at the town level is available at the time of the writing of this plan.)

As mentioned in Chapter 2, the Environmental Justice analysis that was completed showed that the Environmental Justice Target Areas (defined as locations with at least 5 percent of the total population identified as minorities or 12 percent of the population living in households below the poverty level) are generally better served by the current transit infrastructure than are Franklin County residents as a whole. This is because most of the target areas are located in town centers or downtown areas with fairly high population densities for the region. While these areas may receive better transit services than much of the rest of the county, the transit

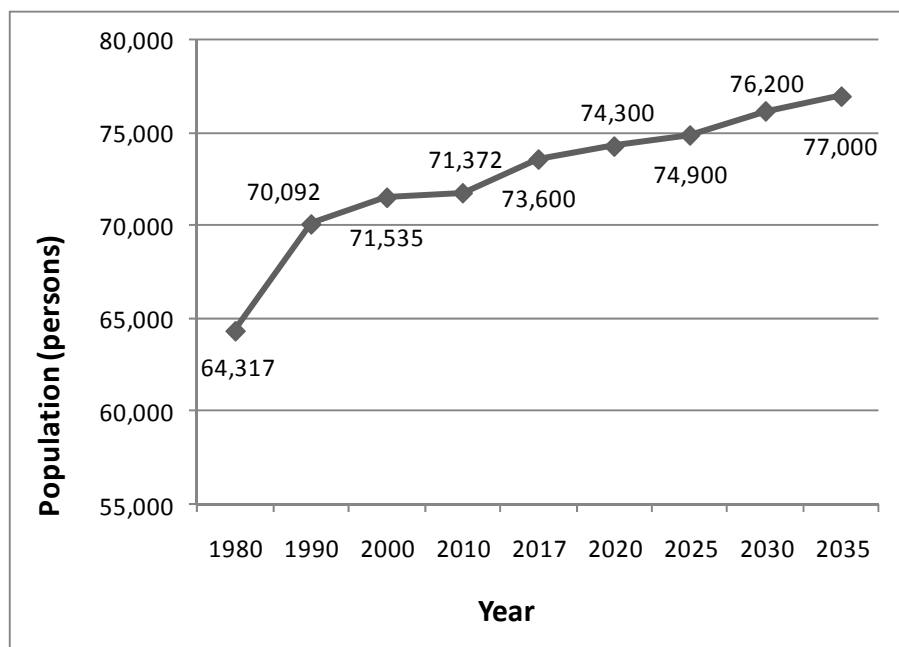
² According to U.S. Census definition, Hispanic or Latinos are considered an ethnicity and may be of any race.

infrastructure can be and should be improved. This is especially important in light of the fact that minorities and lower-income households rely on public transit much more than the average population.

Population Projections to 2035

The demographic data presented previously shows that the Franklin County population is currently fairly stable – it is growing slowly, it is gradually getting older, and the ethnic composition is only slightly changing. This population status is important in determining how current transportation issues should be addressed. It is also important to look ahead and forecast how the population may change in the future in order to meet the shifting demands of the region. As part of this effort, MassDOT has developed socio-economic forecasts for all regions of the Commonwealth, including Franklin County, out to the year 2035. Those forecasts have also been applied to the twenty-six municipalities in the county.

Figure 4-2: Estimated Franklin County Population, 1980 to 2035



Source: MassDOT, in collaboration with FRCOG, 2011.

In general, the MassDOT forecasts show that the next twenty-five years will be a period of moderate growth for the Commonwealth as a whole. Massachusetts is projected to grow at about 10 percent – with some places increasing more rapidly

and others more slowly. The state's pace of growth also applies to Franklin County – its population is projected to grow by a total of 7 percent from 2010 to 2035, increasing to 77,000 people by the year 2035. This total population growth for the county over the next twenty-five years will consist of approximately 5,600 people. Figure 4-2 shows this projected growth in relation to the county's past growth since 1980.

In order to determine the town-level populations over the next twenty-five years, FRCOG used the MassDOT county projections as a control and assumed that each town's share of the 2010 county population would remain the same into the future. Town population forecasts are included in Appendix C. According to these population projections, the greatest total population increases are expected for the Towns of Greenfield, Montague, Orange, and Deerfield.

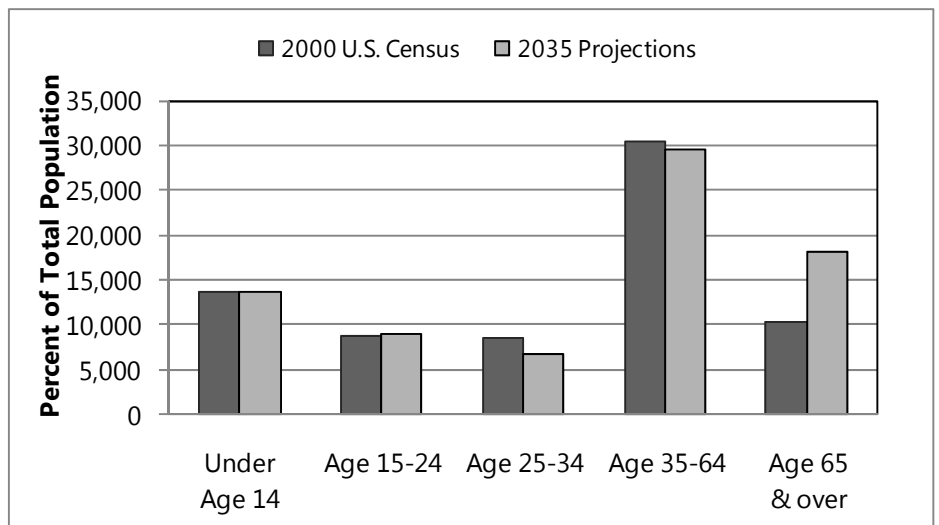
Population Projections by Age Group

As mentioned, it is useful to forecast the future age distribution of the population to help assess and plan for the potential future transportation needs of specific age groups, such as schoolchildren, workforce commuters, and the elderly. As part of the town-level projections, the FRCOG estimated the population age distribution for each Franklin County town for the years 2010, 2020, 2030, and 2035. Tables summarizing these forecasts are given in Appendix C. These projections were created using the MassDOT forecasts assuming that Franklin County and its towns will experience the same patterns of age distribution changes as Massachusetts overall.

Figure 4-3 summarizes the estimated future population age distribution for Franklin County between 2000 and 2035. It shows that the most significant population trend over the next twenty-five years will be the aging of the population and the

growing number of the elderly. From 2000 to 2035, the share of residents aged 65 years old and older will increase by 77 percent - making this segment of the population almost a quarter of the total county population at 23.4 percent. From 2000 to 2035, almost all other age groups will experience declines in their share of the population. Most notably, the largest decrease will occur in the 25-34 age cohort. This group, predominately composed of workforce commuters, will decrease by 20 percent. These forecasted changes in the age distribution of the future Franklin County population can have significant impacts on the transportation infrastructure, since elderly populations depend more on public transportation and paratransit services than the population as a whole. A decrease in the number of commuters may also require a shift of focus as future services are planned.

Figure 4-3: Population Age Distribution for Franklin County, 2000 and 2030



Income and Employment Profile

Income and Wealth

The income levels of a community often indicate the potential transportation needs of a region. Areas with lower-income populations tend to benefit more from the existence of public transportation because the costs associated with using public transportation are less than the costs of owning and maintaining a car. In addition, low income households do not have the resources needed to cope with rising fuel costs,

such as moving closer to work or purchasing a more fuel-efficient vehicle.³

In general, U.S. Census data shows that Franklin County's incomes are much lower than in

Massachusetts as a whole. In 2008, the median household income for the county was \$53,100, which is much less (18 percent less) than Massachusetts's median household income of \$64,680. Another income indicator is per capita income. By this measure, Franklin County's income is still 24 percent lower than the Commonwealth's. Franklin County's per capita income is \$27,244, compared to the Massachusetts per capita income of \$33,806. The lower per capita and median income figures for Franklin County in part reflect the lower average salaries and lower costs of living in Western Massachusetts compared to Boston and other Eastern Massachusetts communities. However, these statistics also reflect economic challenges within the region. These challenges include the loss of a historic manufacturing employment base. As numerous jobs have left Franklin County, they have often not been replaced by comparable employment opportunities with good wages, which have resulted in lower incomes in the region.

Due to the timing of this RTP update, recent U.S. Census data is not available for incomes at the town level within Franklin County. According to the 2000 Census, thirteen of the twenty-six towns in Franklin County had per capita incomes that were among the lowest 55 per capita incomes by town in the Commonwealth. As in most places, the towns with the lowest income statistics and highest poverty rates are primarily found in the more urban, densely settled communities, such as Greenfield, Montague, Orange, and Sunderland. These communities, that also have the largest minority populations as well,

have been the focus of the FRCOG's Environmental Justice work. In 2000, there were also some rural communities with low incomes and high poverty, located primarily along Route 2.

According to the U.S. Census Bureau's Small Area Income Estimates Program, Franklin County had an estimated 12.1 percent poverty rate, compared to 10.1 percent for the State in 2008. Franklin County had the 11th highest poverty rate of the 14 counties in Massachusetts. Poverty figures from the 2000 Census, the latest figures available for individual towns, show that nine of the twenty-six Franklin County towns had a higher proportion of persons living below the poverty level than the State average (9.3%), and five of these towns had higher poverty rates than the National average (12.4%). The areas experiencing high poverty rates include several of the downtowns and village centers that had once been traditional hubs of manufacturing employment, such as Turners Falls (18.9%), downtown Greenfield (15.7%), Shelburne Falls (10.1%), and downtown Orange (9.1%). The small, remote hill towns of Monroe (21.8%) and Hawley (14.2%) are also impacted by high poverty rates.

Employment

Regional employment trends reflect both the condition of the national and regional economy and changes in the region's population. When employment opportunities are created in a region, people are likely to move there. Similarly, when jobs in a region are lost, there is typically an out-migration of residents. To understand long-range transportation trends and commuting patterns, it is important to understand the size of an area's labor force and its employment level. An area's labor force is defined as the number of residents age 16 or over who are currently employed or who are searching for work. Unemployment figures describe the percentage of people in the labor force who are not employed (part-time or full-time) during a certain period, and who are actively seeking work.

Labor Force

According to the Massachusetts Executive Office of Labor and Workforce Development (EOLWD), over the last decade Franklin County's labor force grew

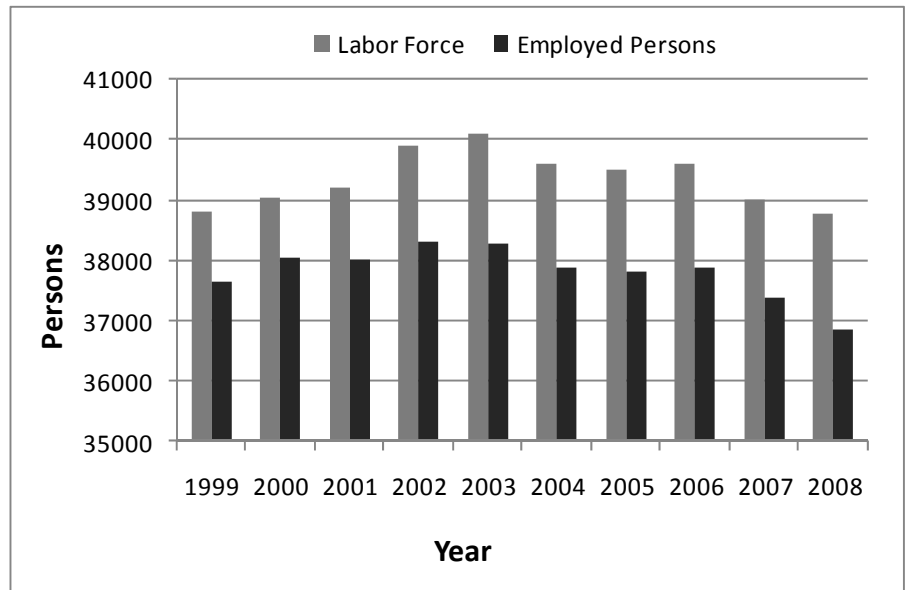
³ Cooper, Mark N. "Rising Energy Prices Strain Household Budgets and the Economy For Most Americans," *Consumers Union*. September 2004.

and then decreased back to 2000 levels. This pattern reflects the larger national pattern of the struggling recession-dominated economy of the last several years.

Labor force information by town is summarized in Appendix C at the back of the Regional Transportation Plan. Predictably, the largest town labor forces in Franklin County are located in the most populated communities. Greenfield contains 24 percent of the county's population and accounts for 23 percent of the labor force for Franklin County. Together, the four largest towns (Greenfield, Montague, Orange, and Deerfield) in the region comprise 53 percent of Franklin County's total population and 51 percent of the county's labor force.

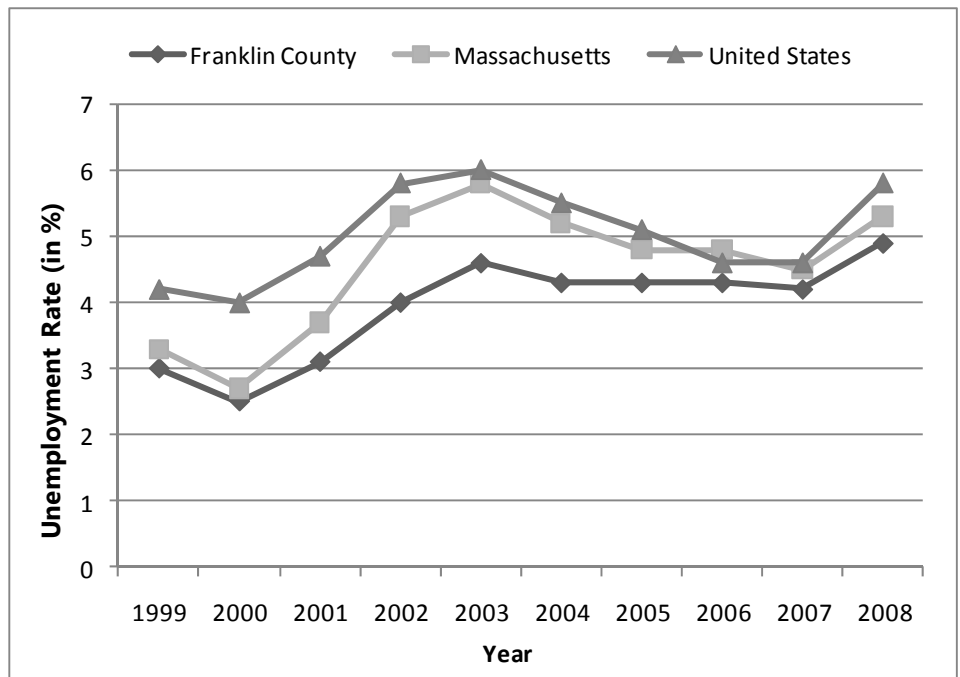
In 2009, Franklin County's unemployment rate of 7.9 percent was only slightly lower than the State (8.4%) and the Nation (9.3%). However, unemployment levels among the individual towns vary greatly. Several towns have consistently experienced high rates of unemployment. According to data from the Massachusetts Department of Workforce Development for 2009, 8 towns in Franklin County had higher unemployment rates than the National rate. The towns with the highest unemployment rates fall into two types of categories: 1) isolated hill towns and 2) downtowns and village centers that had been traditional hubs of manufacturing employment. The hill towns of Monroe and Rowe have unemployment

Figure 4-4: Franklin County Labor Force and Employed Persons, 2000 to 2010



Source: Massachusetts Executive Office of Labor and Workforce Development (EOLWD), 2010.

Figure 4-5: Unemployment Rates at the County, State, and National levels, 2000 to 2009



Source: Massachusetts Executive Office of Labor and Workforce Development (EOLWD), 2010.

rates of 14.8 and 9.1 percent, respectively. The employment centers of Orange (11.0%), Shelburne (10.8%), Erving (9.6%), and Montague (9.2%) are also sites of high unemployment. These unemployment

figures do not distinguish between full or part-time employment and obscure the fact that underemployment is a significant problem for the region. As major manufacturing employers closed in the region there was a loss of full-time jobs with benefits and poverty became more prevalent.

Although the unemployed are not commuting to jobs, they are often traveling for employment interviews and training. Unemployed residents can greatly benefit from support services, including transit services, which can help them access, obtain, and keep good jobs. Without adequate public transportation options, it can be difficult for potential workers who do not have the use of a vehicle to access and maintain quality employment. Assisting low-income residents with transportation to work, training, and educational opportunities that can improve their employment options, is a major focus of the transit network in Franklin County and of proposed transit service improvements. Chapter 9, "Transit and Paratransit Services," describes in detail the transit network and its various services.

The best estimates of self-employed workers in Franklin County are from the U.S. Census Bureau's data on non-employer businesses, which is reported annually (with a two-year lag time) and is thought to capture most self-employed workers. Non-employer establishments are defined as having no paid employees (other than the self-employed individual), have annual business receipts of \$1,000 or more, and are subject to federal income taxes (thus excluding non-profit organizations). The Census Bureau's most recent data (2008) estimates that Franklin County has an estimated 6,191 non-employer businesses, which is an increase of 440 businesses since 2003.

Major Employers

The largest employers in Franklin County are listed in Table 4-4 and are also shown on a map at the end of this chapter. The table includes all 39 of the employers in the region that have at least 100 employees. Most of the major employers are located in the county's primary employment centers, including Deerfield, Greenfield, Orange, and Whately. Yankee Candle, which has its headquarters and a large retail store in Deerfield and manufacturing

facility in Whately, is the largest employer in Franklin County with more than 1,000 employees. In total, there are 8 manufacturers on the major employers list and 8 school districts and educational institutions, including Greenfield Community College. The remaining major employers include 7 retail establishments, 3 medical and health facilities, 2 transportation companies, 2 construction companies, and a mix of other service and information employers.

It is important to note that many Franklin County residents are employed outside of Franklin County; 37 percent of employed county residents commute to jobs outside of the county, often in nearby communities in Hampshire County, such as Amherst and Northampton. The largest single employer of Franklin County residents is the University of Massachusetts at Amherst. In 2002, UMass Amherst estimated that it employed 1,250 Franklin County residents (not including student employees). UMass Amherst has a total of approximately 5,300 non-student staff and faculty members (UMass, 2006).

The closure or downsizing of major employers in the region has had a variety of impacts on the regional economy and on residents. These events have had a negative impact on employment levels and incomes, and at times have contributed to the out-migration of the traditional working age populations. Table 4-5 lists selected, major employer closures and layoffs experienced since 2000. Not disclosed in the table are the ripple effects of jobs lost in related fields, jobs lost in smaller operations linked to specific industry clusters, or reductions in weekly work hours. Also not included in the data is the number of employees hired or rehired at a later date by the same companies or new companies created by laid off employees who turned their skills into new entrepreneurial enterprises.

Table 4-4: Major Employers in Franklin County, 2010.

Number of Employees	Company Name	Location
1,000-4,999	Yankee Candle Co Inc	South Deerfield
500-999	Pelican Products Inc	South Deerfield
250-499	Deerfield Academy	Deerfield
250-499	Northfield Mt Hermon School	Gill
250-499	Greenfield Community College	Greenfield
100-249	Berkshire East Ski Area	Charlemont
100-249	Historic Deerfield Inc	Deerfield
100-249	F M Kuzmeskus Inc	Gill
100-249	Bete Fog Nozzle Inc	Greenfield
100-249	Buckley Healthcare Ctr	Greenfield
100-249	Charlene Manor Extended Care	Greenfield
100-249	Coca-Cola Bottling Co	Greenfield
100-249	Franklin County Sheriff	Greenfield
100-249	Greenfield Savings Bank	Greenfield
100-249	Home Depot	Greenfield
100-249	Kennametal Inc	Greenfield
100-249	Lane Construction Corp	Northfield
100-249	MBW Inc	Orange
100-249	Mohawk Trail Regional High School	Shelburne Falls
100-249	Channing Bete Co Inc	South Deerfield
100-249	Deerfield Elementary School	South Deerfield
100-249	Frontier Regional School	South Deerfield
100-249	All States Asphalt Inc	Sunderland
100-249	Farren Care Ctr Inc	Turners Falls
100-249	Franklin County Tech School	Turners Falls
100-249	Heat-Fab Inc	Turners Falls
100-249	Judd Wire Inc	Turners Falls
100-249	Lightlife Foods	Turners Falls
100-249	Erving Paper Mill	Erving
100-249	Zoar Outdoor	Charlemont
100-249	Travel Kuz	Gill
100-249	Sandri Co	Greenfield
100-249	The Recorder	Greenfield
100-249	Renovators Old Mill Marketing	Millers Falls
100-249	Quabbin Inc	Orange
100-249	Ralph C Mahar Regional School District	Orange
100-249	Rodney Hunt Co	Orange
100-249	Walmart	Orange
100-249	Town Of Shutesbury	Shutesbury

The availability of workforce training programs and transit options to allow workers to attend these programs is a vital resource in helping these workers pursue new employment opportunities.

hikes. For example, in the North Quabbin region, there are new initiatives to promote local wood products and to train guides for hiking.

Tourism Services

One growing sector of the region's economy is the tourism sector. Many of the communities in Franklin County view tourism as a way to enhance their local economies and support local artisans and craftspeople, and also to promote and protect the region's natural, cultural, and historic resources, including farmland and forestland. The Master Plans and Community Development Plans created by a number of towns in the region include recommendations for promoting the towns and the region overall as a place to visit, and for expanding current agri-tourism, eco-tourism, and cultural tourism offerings related to historic sites and artisans. Offerings such as farm stands, maple sugar houses serving pancakes, and other forms of interactive experiences are growing in the agricultural industry. By offering value-added products for sale and visitor activities, many farms have increased the number of customers and their profit margins while diversifying their revenues. Activities such as the "Buy Local" campaign coordinated by Community Involved in Sustaining Agriculture (CISA) and CISA's guides to local farms help support these businesses. Eco-tourism activities include outdoor recreation such as bicycling, rafting, skiing as well as education-related opportunities, like guided nature

Table 4-5: Selected Large Employer Closures and Layoffs, 2000 – June 2010

Industry Sector	Company	Location	Approx. Jobs Lost	Year
Manufacturing	Millers Falls Paper Mill	Erving	120	2000
Manufacturing	Yankee Candle Company	Deerfield	275	2001
Research & Development	Telaxis Communications	Deerfield	253	2000-2002
Manufacturing	Kennametal	Greenfield	148	2002-2003, 2009
Health Care Services	FMC Beacon Program, Franklin Baystate Medical System	Greenfield	148	2002-2003, 2009
Transportation	N & B Trucking	Deerfield	70	2005
Manufacturing	Oxford Foods	Deerfield	85	2006
Manufacturing	Thomas & Betts	Orange	150	2007
Manufacturing	Pliant Corporation	Deerfield	125	2008-2009
Telecommunications	Verizon Call Center	Greenfield	85	2008
Educational/Government	UMass	Amherst*	350	2002-2004, 2008-2010
Educational Services	Northfield Mt. Hermon School	Northfield/Gill	117	2004-2009
Financial Services	Phoenix Home Mutual Life Ins.	Greenfield	111	2000, 2008
Education Services	Maple Valley School	Wendell	120	2009
Manufacturing	Disston Company	Deerfield	54	2009

*Amherst is located just outside of Franklin County, but is included in this list since UMass is the largest employer of Franklin County residents.

The FRCOG assists communities with these initiatives on behalf of various granting agencies.

The FRCOG is developing the Franklin County Bikeway, with off-road sections completed in 2008 and many shared roadways marked with trailblazing signs in 2009. The FRCOG also worked in close partnership with the Town of Orange to create their Riverfront Park in downtown Orange which helps advance the creation of a Millers River Greenway between Riverfront Park and the Millers River Environmental Park in downtown Athol.

Another activity related to tourism is the designation of scenic byways in the region. Franklin County has the most scenic byways in the state with 5 of the 7 byways in Western Massachusetts – one of which is a nationally designated scenic byway. The designation of scenic byways and the creation of management plans for the scenic byway corridors can help protect and promote the scenic, cultural, historic, natural, and recreational assets along the byways. The scenic byway corridor management plans always include a tourist component. The FRCOG's many scenic byway tourism activities are described more fully in Chapter 15, "Scenic Byways & Regional Tourism."

Employment Projections

Employment projections are useful for transportation planning, because they can help estimate future commute travel flows and help assess the need for transportation services and facilities for work-related travel.

As with the population forecasts used in this RTP, the employment forecasts were produced by MassDOT based on the same basic methodology that was used for the 2007 RTP. The total employment in an area is equal to the number of employed residents in the area, plus the number of non-residents who commute into that area to work. Excluded from the figure are the residents who commute out of the area to work.

MassDOT provided employment forecasts for the regional level. FRCOG then allocated these projections to the municipal level for all of the towns within Franklin County. Appendix C shows the results of this exercise. These allocations were performed with the assumption that each town's share of employment will remain constant over the next twenty-five years. This is based on the premise that primary employment trends are regional and

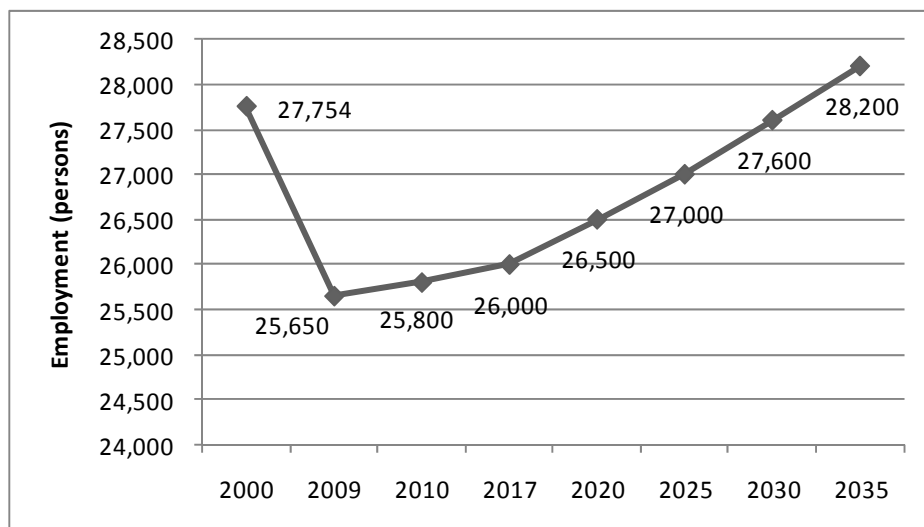
the employment centers in Franklin County today will continue to be the employment centers in the county for the foreseeable future. From an employment perspective, the most important population changes are those that occur at the regional level. Population changes for individual towns, especially smaller towns, have only a minor impact on employment since many workers commute to jobs outside of their community.

evaluated as to how it can best serve the area's labor force as it grows.

Transportation Profile

Because of Franklin County's rural character and limited transit services, the county has a high level of private vehicle ownership and usage and most of Franklin County residents rely heavily on their vehicles for travel.

Figure 4-6: Estimated Franklin County Employment, 2000 to 2035



Source: U.S. Census and MassDOT Projections.

As shown in Figure 4-6, the forecasts show that Franklin County's total employment will grow by 9 percent over the next twenty-five years. This is similar to the state, which is projected to grow by 10 percent over the same time frame. Current employment in Franklin County stands at 25,560 and will grow by an additional 2,500 employees by the year 2035.

The forecasts show that Franklin County will add jobs by the year 2035. However, because of the lingering effect of the recent economic recession, employment levels will not match 2000 employment levels until the year 2030. In terms of planning for the transportation of commuters in the region, these forecasts seem to indicate that the current highway infrastructure may be sufficient for commuters' needs. The status of the public transit system should be evaluated to ensure that it is serving the workforce efficiently and effectively. In addition, the return of passenger rail to the region should be

Registered Motor Vehicles

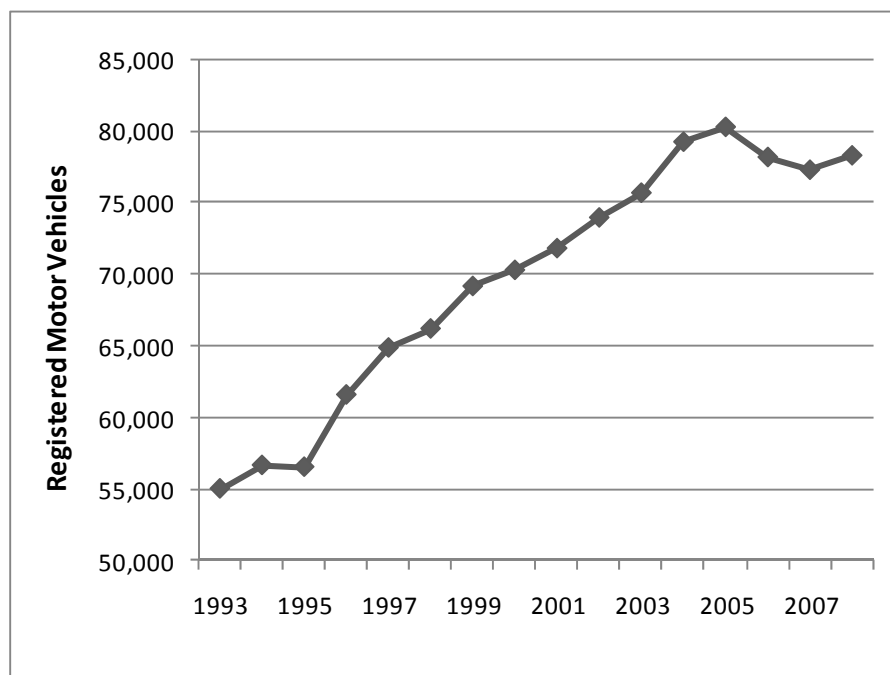
Data on the number of registered motor vehicles based in Franklin County show that the number of vehicles in the region continues to grow at a rate faster than the population. Between 1990 and 2000, the number of registered vehicles in Franklin County increased 28 percent to 69,770. Between 2000 and 2008, the number of registered vehicles grew by another 15 percent to 80,268. Overall, during the sixteen years between 1993 and 2008, the number of registered vehicles grew

by 42 percent. At the same time, Franklin County's population only grew by 6 percent. The disproportionate increase in the number of registered vehicles compared to population growth, suggests there is increasing motor vehicle usage in the region and a growing dependence on motor vehicles for transportation. This trend is likely to continue despite the small decline and leveling of registered vehicles that occurred from 2006 to 2008. This change in trend is most likely temporary due to poor economic conditions and will continue to increase again as the economy recovers.

Households Without Cars

The decennial U.S. Census is the best source of data on households without motor vehicles. According to the 2000 U.S. Census, 8 percent of Franklin County households (approximately 2,285 households) do not own or have access to a motor vehicle for their transportation needs, compared to 13 percent of households statewide.

Figure 4-7: Total Number of Registered Motor Vehicles



Source: Massachusetts Department of Revenue, Division of Local Services, 2009.

The Census figures show that the two population groups that are most likely to not own a car are renter households and older households. An estimated 16 percent of renter households in Franklin County have no vehicle available. The higher rate of carlessness among renters is related to two primary factors. One, most of Franklin County's rental housing is located in village and downtown areas that, because of their population density, typically have the highest degree of access to transit services. Secondly, renter households, on average, have lower incomes than homeowners and are more likely not to own a private vehicle because of the costs associated with vehicle ownership. Studies by the Bureau of Transportation Statistics (BTS) and the Surface Transportation Policy Program (STTP) have found that transportation costs are typically the second largest household expense next to housing. Low income households can be particularly burdened by transportation costs, spending a quarter of their income or more, on their travel and private vehicle expenditures. The STTP study found that switching from the use of a private vehicle to transit service can save a family thousands of dollars annually.

The Census data show that, by age group, elderly households, especially older elderly, are most likely to not have a car. For example, 22 percent of households led by householders aged 75 or older are carless. Reasons for the higher level of carless households among the elderly include physical limitations, which make driving difficult, and as discussed above, the expense of private vehicle ownership for elderly fixed-income households.

Commuting Trends

Mode of Transportation to Work

The automobile is the primary mode for commuting travel in Franklin County. The most current source of information on commuting patterns within the region is the U.S. Census

Bureau's 2006-2008 American Community Survey. Between 2006 and 2008, 88 percent of Franklin County's employed residents commuted to work by car; with 79 percent driving to work alone, and 10 percent carpooling. Table 4-6 compares Franklin County's modes of transportation to that of Massachusetts. The percentage of Franklin County workers that took transit is small: in 2000, only 1 percent took transit. In Franklin County, an estimated 3.8 percent of workers walked to work –

Table 4-6: Mode of Transportation for Franklin County Residents, 2008

Mode of Transportation	Franklin County	Massachusetts
Drive Alone	79.3%	72.9%
Carpool	8.8%	8.4%
Transit	1.3%	8.9%
Bicycle	0.4%	0.6%
Walk	3.8%	4.4%
Taxi, Motorcycle, Other	0.9%	0.8%
Worked at Home	5.2%	3.8%

Source: U.S. Census Bureau – 2006-2008 American Community Survey, CTPP.

an increase of almost 1 percent since 2000. In addition, 5.2 percent of workers in Franklin County worked from home. Town level data is not available for the 2006-2008 period, but historically many of those that worked from home lived in the more remote hilltowns of the county. The 2000 U.S. Census showed that in five Franklin County towns, over 10 percent of employed residents worked from home; these towns are Ashfield, Conway, Hawley, Leverett, and Rowe. Except for Leverett, all these communities are located in the western Franklin County hilltowns, the most rural area of Franklin County.

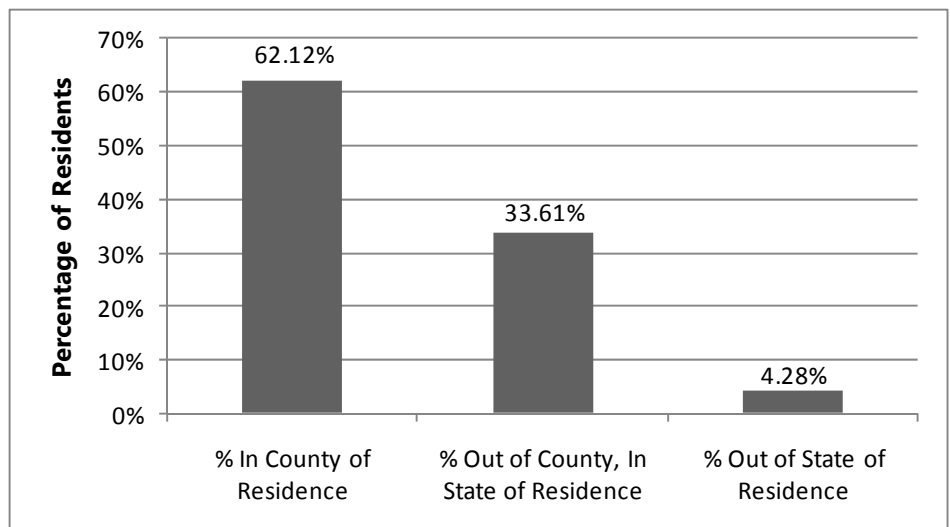
It is anticipated that the employees working from home, also known as telecommuters, will continue to increase in Franklin County in the coming decades. The growth in telecommuting will be driven by the increasing number of technology and information-based jobs that can be conducted from remote locations, such as a workers' home. It will also be driven by the number of people who move to Franklin County, but who choose to keep jobs that are based outside of the region and to which they do not need to commute to every day. Another important factor that will promote telecommuting in the region is the recent and pending expansion of telecommunications infrastructure and high-speed internet services in the region. It is currently estimated that approximately half of all Franklin County towns have broad access to high-speed internet services in their community. The other half of these towns may only have access in very limited areas or have no broadband access at all. Fortunately, the Massachusetts Broadband Institute (MBI), assisted by efforts initiated by WesternMA Connect, have undertaken significant steps toward bringing broadband and high-speed internet access to more communities in the region. In collaboration with MassDOT, the MBI has recently completed the installation of a fiber optic conduit along the Interstate-91 Corridor. The I-91 project is

the first stage of over \$70 million of "middle mile" infrastructure investment over the next three years to be made by the MBI in western Massachusetts, including Franklin County. As the telecommunications infrastructure begins to branch out from the middle mile, the region will be more able to attract and retain workers who wish to work from home and who need high-speed internet access to be able to do so.

Commute Patterns

The U.S. Census Bureau's American Community Survey collects information on where residents work compared to where they live. The Census Bureau estimates that, during the 2006-2008 period, approximately 62 percent of Franklin County residents worked in Franklin County, and the other 38 percent commuted to jobs outside the county (Figure 4-8). The majority of residents commuting to work outside Franklin County worked in Hampshire County (20%), though some worked in Worcester

Figure 4-8: Location of Franklin County Residents' Work



Source: U.S. Census Bureau – 2006-2008 American Community Survey, CTPP.

County (6%), Hampden County (5%), or Windham County, Vermont (2%). The remaining 4 percent of employed Franklin County residents worked elsewhere, many of them likely in Eastern Massachusetts.

A major contributing factor for the population increase that is occurring in many of the eastern (between 2005 and 2010) and southern (between

2000 and 2005) Franklin County towns is the easy commute from the county to jobs in Hampshire County and other nearby regions. Eastern towns in Franklin County, such as Orange, are especially facing similar trends. Orange is located along Route 2, a major east-west highway in Massachusetts that intersects the I-95/128 corridor in the Boston metropolitan area. The Census data show that more workers are commuting longer distances to their jobs than in the past. Between 2006-2008, 6.3 percent (2,188) of employed Franklin County residents commuted an hour or more to their jobs, up from 5.6 percent (2,059) in 2000.

Most of the workers who commute to jobs in Franklin County live within Franklin County. The most recent commuting data available at the town level is from the 2000 U.S. Census. While this data is older, it is unlikely that there have been significant changes to the commuting patterns within the county over the last decade. Table 4-7 gives the county of origin for workers commuting to the five towns in Franklin County with the highest levels of employment (Greenfield, Deerfield, Montague, Orange, and Whately). At least 60 percent of the people working in each of these towns reside in Franklin County.

For example, an estimated 85 percent of people working in Montague live in Franklin County, as do 84 percent of Greenfield workers. The data also show that 26 percent of people working in Whately and 18 percent of people working in Deerfield live in Hampshire County.

The highest levels of commuting into Franklin County on a town basis are seen for Athol, Northampton, and Amherst, with an estimated 830, 640, and 500 residents respectively from each community commuting to jobs in Franklin County.

For Franklin County residents commuting to jobs outside of Franklin County, two major destinations are Amherst and Northampton. According to the 2000 U.S. Census, approximately 3,600 Franklin County residents work in Amherst, and 1,900 Franklin County residents work in Northampton. In addition, the largest single employer of Franklin County residents is the University of Massachusetts (UMass) at Amherst.

Table 4-7: Commute Patterns to Major Franklin County Employment Centers, 2000

Town	Employment Level (Workers)	% of Total Workers Residing in Franklin County	% of Total Workers Residing in Hampshire County	% of Total Workers Residing in Hampden County	% of Total Workers Residing in Worcester County	% of Total Workers Residing in Other Areas
Greenfield	10,509	84.1%	7.0%	2.4%	1.6%	4.9%
Deerfield	3,456	69.3%	18.1%	7.0%	2.0%	3.5%
Montague	2,988	85.4%	5.0%	4.2%	2.0%	3.4%
Orange	2,306	67.9%	2.4%	1.0%	26.5%	1.7%
Whately	1,846	62.9%	25.6%	8.7%	0.7%	2.1%

*This includes self-employed workers and employees working at work. Source: U.S. Census Bureau – 2000 Census, Summary File 3.

Table 4-8 provides a summary of selected towns outside of Franklin County to which Franklin County residents commute. In addition to Amherst and Northampton, other towns with significant numbers of employees from Franklin County include Hadley, Hatfield, and Athol. It is noteworthy that few Franklin County residents commute to employment centers in Berkshire County such as North Adams. Residents from towns that border Berkshire County are much more likely to commute to Greenfield or to towns in Hampshire County.

Land Use

As the state's most rural region, Franklin County has experienced only a limited amount of development. Historically, farmlands and forests occupied almost all of the county's land area. Today, forestland is still the predominant land use, accounting for more than three-quarters (77%) of the county's acreage, and even the most urbanized towns in the county, such as Greenfield, are at least 45 percent forested. Farmland is the

Table 4-8: Selected Employment Centers and Number of Franklin County Commutes

Town	Employment Level (Workers)	Number of Workers Commuting from Franklin County*	% of Total Workers that are from Franklin County
Hampshire County			
Amherst	23,501	3,631	15.5%
Hadley	4,092	713	17.4%
Hatfield	2,544	532	20.9%
Northampton	20,037	1,914	9.6%
Worcester County			
Athol	4,543	941	20.7%
Berkshire County			
North Adams	6,652	50	0.8%

*This includes self-employed workers and employees working.

Source: U.S. Census Bureau – 2000 Census, Summary File 3.

second largest land use, comprising 7.8 percent of the county's total land area. All developed land uses (residential, commercial, etc.) combined account for only 5.7 percent of the county's acreage. These figures are based on MassGIS' 2005 mapping of land uses from aerial photographs. The 2005 acreage by land use for Franklin County is shown in Table 4-9. Although Franklin County is predominately undeveloped, it has been experiencing substantial growth and development in recent decades. Between 1985 and 1999, the amount of developed land in Franklin County increased 30 percent (7,200 acres). Most of this new development, almost 6,600 acres, was residential in nature. In Massachusetts, new residential development can occur along road corridors with relative ease, due to the State's Approval-Not-Required (ANR) rules, which allow for the subdivision of land without Planning Board approval, if certain conditions can be met. These conditions are that each subdivided lot must meet minimum road frontage requirements and must have adequate access to protect public safety and welfare. As a result of the expansion in residential acreage from 1985 and 1999, the amount of Franklin County agricultural land decreased by 12 percent and the amount of forestland fell by 2 percent.

Table 4-9: Franklin County Land Use, 2005

Land Use Category	Acreage	% of Total
<i>Undeveloped Land</i>	436,975	94.3%
Forest	357,909	77.2%
Agriculture	36,072	7.8%
Open Land	8,164	1.8%
Recreation	1,716	0.4%
Water/Wetlands	33,111	7.1%
<i>Developed Lands</i>	26,535	5.7%
Residential	18,981	4.1%
Commercial/Industrial	2,178	0.5%
Urban Open*	2,072	0.4%
Transportation	2,167	0.5%
Other Developed Uses**	1,136	0.2%
<i>Total Acreage</i>	463,511	100%

*Urban Open land includes parks, cemeteries, public and institutional buildings, and green spaces.

**Other Developed Uses include mining and waste disposal.

Source: MassGIS, 2005.

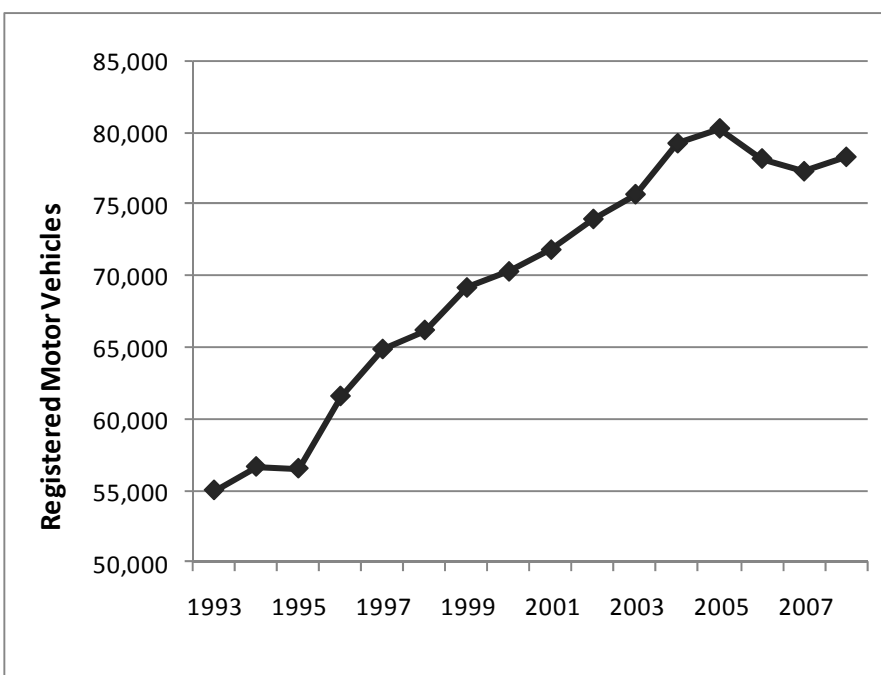
MassGIS recently updated its aerial photography and land use data in 2005. Unfortunately, due to different data collection methodology, the 2005 land use data is not directly comparable to the 1999 land use data. As a result, it is difficult to assess how land uses have changed in the six years between 1999 and 2005. However, the trend of residential growth is believed to be continuing since 1999, albeit at a much slower pace during the latter half of the decade due to the poor state of the national economy. Building permit data show that between 2000 and 2004, the number of new housing units in the region grew by 1,126 or 25 percent. Almost all of these housing units were single-family homes built along existing roadways, such as on ANR lots. There are currently very few subdivisions being built in the region. However, as growth in the region continues and there is less land along existing frontage available for development, it is anticipated that more subdivisions will be constructed. These subdivisions will include new roadways to serve the new homes. These roadways will need to be maintained as either private roads by the developer and property owners, or as public roads by the communities in which they are located. The impact of the subdivision roads on existing roadway infrastructure will also need to be assessed.

Since 2004, the pace of residential home construction has decreased. Between 2004 and 2009, the number of building permits issued declined significantly – dropping by 77 percent (as seen in Figure 4-9). This rate of decline is similar to that of the state, New England, and the nation. During the same time period, New England’s number of building permits issued also declined by 70 percent. These decreases in home construction can be directly attributable to the national credit crisis and resulting “Great Recession” and, as a result, are viewed as temporary. In fact, the number of single family

building permits has begun to increase during 2010. Massachusetts saw an increase of 33% between August 2009 and August 2010. During the same time period, New England experienced a 32% increase and the United States increased by 10 percent.⁴

In response to development pressures and concerns about their ability to handle future potential growth, in recent years a number of Franklin County communities, including Erving, Gill, and Orange have revised their zoning bylaws to direct growth to areas within their towns with the highest current levels of development and the best infrastructure (water, sewer, roadways) to accommodate new growth. Towns have also worked to encourage other areas to

Figure 4-9: Number of Building Permits Issued in Franklin County, 2000 to 2009



Source: U.S. Census Bureau, 2009

remain undeveloped farmland and forestland. In particular, land conservation organizations in the region, such as the Franklin County Land Trust and the Mount Grace Land Conservation Trust, have protected a considerable amount of private farm and forestland in the region through purchases of land and the purchases of development rights for other

⁴ “Construction Statistics,” National Association of Home Builders, August 2010.

land parcels. As of November 2010, 29 percent of the total acreage of Franklin County has been protected from development (MassGIS).

It is good for the region to be proactive in planning for its future, and for its future transportation infrastructure needs. It is important to consider the link between land use and transportation as new transportation facilities are reviewed or the expansion of old facilities are evaluated. It is also important to recognize that transportation improvements or expansions, such as adding roadway lanes, upgrading bridges to remove weight restrictions, or establishing and expanding transit services, can themselves promote additional development and influence future development patterns.

Summary of Demographics and Socioeconomic Trends

The following are key demographic and socioeconomic trends that have significant implications for the transportation system and transportation planning within the region:

- **There have been increased rates of population growth, in the eastern and northern areas of Franklin County.** Population growth in the outer lying areas of the county mean that more people will be likely traveling farther for their daily trips, whether it is for work or for errands. This could lead to higher maintenance costs for road infrastructure. To save on the wear and tear of the roads, the public transit systems to these areas should be evaluated to determine if the service is sufficient or should be adjusted.
- **There has been and will continue to be a high growth in the number of elderly residents.** The elderly are one of the largest user groups of public transportation services, both fixed-route transit and more intensive, expensive demand-response van service. These services will likely need to be expanded to meet rising demand due to the aging of the population and the increasing number of seniors living in Franklin County.

- **There will likely be an expansion of Environmental Justice target populations in the future.**

As the state and national economies recover, it is anticipated that future development pressures and rising land costs in Hampshire and Hampden Counties are likely to result in larger Environmental Justice target populations living in Franklin County. It will be important to ensure that the target populations have adequate access to transportation services and that they continue to be included in regional transportation planning processes. Some of these groups' transportation needs, including their commute and travel patterns, may differ from that of other residents, and this issue, combined with potential cultural and language barriers, will have to be addressed. The FRCOG is committed to working with other agencies in the region to do so.

- **Increased employment in Franklin County.**

The forecasts show that employment will increase in Franklin County. This increase will most likely be focused in current employment centers. It will be important to evaluate the public transit and passenger rail services to ensure that they are efficiently and effectively meeting the commuting workforce's needs.

- **Growing number of telecommuters.**

It is expected that the number of telecommuters, workers who work primarily from home using technology to be connected to their employer, will continue to grow in coming decades. U.S. Census data show that the number of employed Franklin County residents that work from home has been steadily increasing over the past twenty years. In 1990, 4 percent of residents worked from home compared to the 5 percent in 2000. In 2008, the U.S. Census estimates that this increased slightly to 5.2 percent. The projected continued growth in telecommuting will be driven by the increasing number of

technology and information-based jobs that can be conducted primarily from remote locations. The trend will also be driven by the growing number of people who move to Franklin County for its relatively low living costs and other attractive attributes, but who choose to keep jobs that are based outside of the region that they do not need to commute to every day.

Another factor that will promote telecommuting in the region is the ongoing expansion of high-speed internet and telecommunications infrastructure in the region. In collaboration with MassDOT, the Massachusetts Broadband Institute has recently completed the installation of a fiber optic conduit along the I-91 Corridor. The I-91 project is the first stage of over \$70 million of “middle mile” infrastructure investment over the next three years to be made by the MBI in Western Massachusetts, including Franklin County. As the telecommunications infrastructure begins to branch out from the middle mile, the region will be more able to attract and retain workers who wish to work from home and who need high-speed internet access to be able to do so.

5



Road and Bridge Infrastructure

2012

REGIONAL TRANSPORTATION PLAN

5 Roadway and Bridge Infrastructure

Comprised of scenic roadways and covered bridges, Franklin County has a diverse collection of transportation resources. A safe and efficient transportation network depends on the quality and integrity of the transportation infrastructure in the county, including roads and bridges. This chapter examines the condition of these road and bridge resources, and includes an analysis of the roadway network (mileage and functional classification), traffic volumes, bridge ratings, pavement management analysis, congestion and traffic operations. The goal of this chapter is to identify existing concerns and future needs based on this analysis and public input received during the development of this plan.

The programs and projects recommended in this chapter are consistent with the goals of the MassDOT's long-range statewide transportation plan, *The Commonwealth of Massachusetts Long-Range Transportation Plan* (2006). MassDOT's statewide plan emphasizes the "Fix-It-First" policy of maintaining and upgrading existing roadway and bridge infrastructure over supporting the creation of new transportation facilities. The statewide plan also focuses on improving transportation safety, enhancing mobility for people and for goods, and improving operational efficiency and cost-effectiveness. MassDOT's statewide plan also includes goals that foster sustainable growth as well as encourage the preservation of historic and scenic resources.

Existing Conditions

Franklin County consists of nearly 1,700 centerline miles. The majority of these miles, nearly 80 percent, are maintained by the Towns, while MassDOT owns and maintains almost 11 percent of the roads. The remaining 9 percent of the roads are owned by various other entities or classified as

unaccepted. Table 5-1 details the breakdown of roadway jurisdiction within each of the municipalities.

Functional Classification

Functional classification is the categorization of highways and roadways in terms of the service that the roads provide within the regional network, as mandated under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Additionally, functional class has both rural and urban designations based on the U.S. Census population figures. The urban boundaries are based on population figures available from the 2000 U.S. Census. All the urban areas in Franklin County are defined as urban clusters (Census block groups with a population density of 5,000 to 50,000).



View of the General Pierce Bridge

The majority, 84 percent, of roadway mileage in Franklin County is categorized as rural, with the remaining 16 percent defined as urban. The breakdown of road miles in Franklin County according to functional classification is summarized in Table 5-2. A map of the roadways in the county, along with the functional classification of each roadway is located at the end of this chapter.

Table 5-1: Roadway Centerline Mileage by Maintenance Authority

	Maintenance Authority						
Town	MassDOT	Town	State Forest or Park	DCR* (Other)	State College	Un-accepted**	Town Totals
Ashfield	10.97	71.38	0.36	0.00	0.00	0.48	83.19
Bernardston	15.20	41.83	0.00	0.00	0.00	1.04	58.07
Buckland	6.04	43.05	0.00	0.00	0.00	1.42	50.50
Charlemont	12.00	43.12	1.63	0.00	0.00	0.80	57.55
Colrain	3.99	78.85	1.18	0.00	0.00	2.30	86.32
Conway	6.53	64.11	0.00	0.00	0.00	0.32	70.96
Deerfield	19.97	77.47	1.16	0.00	0.00	1.53	100.44
Erving	13.57	17.51	7.43	0.00	0.00	1.00	39.51
Gill	3.94	34.92	0.13	0.00	0.00	4.65	43.65
Greenfield	18.83	102.24	0.00	0.00	2.04	9.15	132.25
Hawley	0.00	44.82	3.49	0.00	0.00	0.22	48.53
Heath	0.00	52.18	1.55	0.00	0.00	5.81	59.53
Leverett	5.44	34.50	0.00	0.00	0.00	3.07	43.01
Leyden	0.00	35.54	0.00	0.00	0.00	2.54	38.08
Monroe	0.00	16.72	1.67	0.00	0.00	0.00	18.39
Montague	5.73	103.94	0.56	0.00	0.00	4.07	114.31
New Salem	11.94	35.64	0.20	53.79	0.00	2.23	103.79
Northfield	11.18	65.532	0.06	0.00	0.00	6.97	83.73
Orange	12.28	87.232	0.55	0.00	0.00	3.47	103.53
Rowe	0.00	35.89	0.00	0.00	0.00	0.35	36.24
Shelburne	9.33	49.77	0.00	0.00	0.00	0.08	59.18
Shutesbury	3.16	30.90	0.00	5.17	0.00	2.73	41.95
Sunderland	4.48	38.94	2.90	0.00	0.00	0.00	46.31
Warwick	0.01	56.02	6.64	0.00	0.00	1.82	64.49
Wendell	0.31	46.40	16.49	2.02	0.00	1.26	66.47
Whately	8.72	31.15	0.00	0.00	0.00	8.41	48.27

Centerline Miles refer to the linear length of a road segment. For divided highways, only the length of one side of the roadway has been counted.

*Department of Conservation and Recreation. State parks and forests are also under the jurisdiction of DCR.

**Unaccepted Roadways consist of roads open to public travel but not formally accepted by a city or town, as well as some private ways.

Source: Executive Office of Transportation, Road Inventory Year-End Report 2009.

Federal-Aid money is available for improvements and maintenance to both urban and rural defined roadways in categories 1 to 5 and to the Urban Collectors in category 6. Approximately 25 percent of the roads in Franklin County's road network are classified in categories 1 through 5 and Urban Collectors in category 6. The remaining 76 percent of the county's roads are functionally classified as "rural minor collector" or "local" and depend on Chapter 90 funding from the State for improvements and maintenance.

Traffic Volumes and Growth Trends

In Franklin County, traffic volume data has been collected at almost 750 different locations since 1991, the majority of which have been conducted by the FRCOG and MassDOT. The FRCOG maintains a database of this traffic volume data and annually produces a Traffic Count Data Book for all counted locations in Franklin County.

Traffic volumes on Franklin County's roadways vary from over 25,000 vehicles per day on sections of Interstate 91 to less than 100 vehicles per day on a number of local roadways. The most heavily traveled roadway in Franklin County is Interstate 91 where Average Annual Daily Traffic (AADT) volumes range from approximately 30,000 vehicles per day in Whately to approximately 20,000 vehicles per day through Bernardston. Along Route 2, AADT volumes vary between 22,000 vehicles per day near the Greenfield Rotary to less than 2,000 vehicles per day through parts of Charlemont. Other high volume corridors include Route 116 in Sunderland and Route 5/10 in Whately, with traffic volumes near 15,000 vehicles per day.

Using a sampling of data collected between 2005 and 2009 at 20 locations throughout the county, annual traffic growth was examined and an average growth rate (AGR) for traffic was estimated. The AGR for the period between 2005 and 2009 was calculated equal to -2.00%. In other words, traffic

Table 5-2: Roadway Centerline Mileage by Functional Class

Functional Classification	Total Centerline Mileage	Percentage of Total
1. Rural Interstate	15.97	0.94 %
Urban Interstate	7.83	0.46 %
2. Rural Principal Arterial	29.99	1.76 %
3. Rural Minor Arterial	55.15	3.25 %
Urban Principal Arterial	22.06	1.30 %
5. Rural Major Collector	231.87	13.64 %
Urban Minor Arterial	45.43	2.67 %
6. Rural Minor Collector	120.42	7.09 %
Urban Collector	23.83	1.40 %
7. Rural Local	985.74	58.01 %
Urban Local	161.05	9.48 %
Total	1699.34	100.00 %

Centerline Miles refer to the linear length of a road segment. For divided highway, only the length of one side of the roadway has been counted.
Source: Massachusetts Department of Transportation, Road Inventory Year-End Report and Road Inventory File, 2009.

has declined at a rate of approximately 2 percent between 2005 and 2009.

Bridges

Bridges are a critical component of the Franklin County roadway network. Maintaining the safety and functionality of bridges in Franklin County is a top priority. The majority of bridges located on high volume roadways are predominantly under the domain of the State and are inspected by MassDOT and ranked according to standards established by the American Association of State Highway and Transportation Officials (AASHTO). The purpose of the AASHTO rating is to provide a standard to compare the status of bridges in a region and across the country. Many factors are considered when developing the rating of a bridge, such as its structural integrity, the road's functional classification, the designed purpose of the bridge, etc. The AASHTO rating may allow some generalized assumptions, however, because so many factors are rating determinants it is important to research each bridge individually for specific information. In general, for a bridge to be eligible for reconstruction it must have an AASHTO rating of less than 75; and for a bridge to be eligible for

replacement it must have an AASHTO rating of less than 50. Bridges may be further classified as *structurally deficient* (SD) or *functionally obsolete* (FO). Each of these classifications can increase the priority of repair or replacement of the bridge.

MassDOT maintains a listing of all bridges that meet the National Bridge Inventory (NBI) criteria set by FHWA. This criteria identifies bridges that are publicly owned highway bridges longer than twenty feet located on public roads. Railroad and pedestrian bridges are not included in the NBI, nor are bridges that have been closed for more than 10 years. Bridges that are not listed in the NBI are not eligible to receive Federal bridge replacement funding¹. This bridge listing includes the year the bridge was built or rebuilt, the AASHTO rating from the most recent bridge inspection, and whether the bridge is structurally deficient or functionally obsolete. The MassDOT District offices have provided information on bridges with weight restrictions and closures, and the TIP has been reviewed to identify those bridges that have been programmed for funding. Information on Franklin County bridges and their current classification are shown in a map at the end of this chapter.

In a recent survey, the majority of residents in Franklin County felt that the condition of bridges has worsened in the past five (5) years.

Bridges are considered structurally deficient if they fall below specific thresholds. These bridges may span a range of conditions, from requiring a minor, but vital, repair to a more complete rehabilitation. As with all bridges in the Commonwealth, safety concerns are paramount. If a bridge is in need of significant repair to maintain current traffic volumes and vehicular weight, then that bridge should be high on the priority list. Statewide, priority for funding is given to structurally deficient bridges.

Bridges may also become functionally obsolete. Functionally obsolete refers to a bridge's inability to

fully support the roads they serve due to variables such as limited width or height. Such a determination is based on the current operating capacity of the bridge. This bridge classification helps identify areas where mobility may be decreased as a result of the bridge. For example, if a four-lane roadway leads into a two-lane bridge, some level of congestion is expected as a result of the decreased capacity. While the bridge may be structurally sound, the issue lies in the capacity of the bridge to carry traffic. Functionally obsolete bridges may not present a safety hazards, but may contribute to overall congestion. This bridge classification category can be used to identify problem areas in the transportation network.



View of the Conway Covered Bridge

¹ <http://www.fhwa.dot.gov/bridge/nbis/#10>

Table 5-3: NBIS Bridge Condition, per Town

Town	Bridge Condition			Total Bridges
	Functional	Functionally Obsolete	Structurally Deficient	
Ashfield	9	1	0	10
Bernardston	12	0	3	15
Buckland	12	3	3	18
Charlemont	20	4	2	26
Colrain	21	2	2	26
Conway	11	5	2	18
Deerfield	9	2	5	16
Erving	5	2	2	9
Gill	2	0	2	4
Greenfield	32	9	6	47
Hawley	8	0	2	10
Heath	3	1	1	5
Leverett	4	3	3	10
Leyden	1	0	0	1
Monroe	2	0	2	4
Montague	9	5	4	18
New Salem	1	0	1	2
Northfield	9	2	1	12
Orange	9	1	5	15
Rowe	2	1	0	3
Shelburne	3	0	1	4
Shutesbury	0	0	0	0
Sunderland	1	0	0	1
Warwick	2	0	1	3
Wendell	1	0	0	1
Whately	13	1	1	15
County Totals	201	42	49	293

There are a total of 293 bridges in Franklin County that are on the NBI, according to the 2009 MassDOT Bridge Inventory. In order for a bridge to be eligible for reconstruction it must have an AASHTO rating of less than 75. There are currently 125 (43 percent) bridges in Franklin County which are eligible for reconstruction according to this requirement. Of those 125 bridges, 37 (13 percent) of them meet the requirements for replacement with an AASHTO rating of less than 50. Further analysis of this data revealed that a total of 49 bridges in the county are formally classified as structurally deficient and an additional 42 bridges are formally classified as functionally obsolete. Table 5-3 presents an overview of the bridge condition for NBI bridges in Franklin County, by municipality.

Several other types of bridges are located throughout the county in addition to those bridges listed on the NBI. The jurisdiction of these bridges ranges from private ownership to being municipally owned. Additional bridge categories include bridges such as pedestrian bridges, culverts and railroad bridges. While MassDOT is responsible for the inspection of all NBI bridges, MassDOT also maintains an inventory of all additional bridges in the state.

In addition to data collected by MassDOT, the FRCOG also collected qualitative data from Franklin County residents as part of the Regional Transportation Plan Update. To gain a better understanding of the qualitative perception of bridge conditions in the region, a question addressing bridge conditions was included on the transportation survey that was distributed as part of the public outreach of this Regional Transportation Plan. The survey asked Franklin County residents to indicate if they felt that bridges in the county have improved, stayed the same, or gotten worse over the past 5 years.

The majority of respondents (47 percent) felt that bridges have worsened in the past 5 years. Furthermore, approximately 32 percent of residents felt that they have stayed the same, while 14 percent saw an improvement in bridge conditions. The remaining 8 percent had no opinion.

Pavement Management Analysis

A Pavement Management System (PMS) is a planning tool that collects and monitors information on current pavement conditions, evaluates and prioritizes alternative maintenance, rehabilitation and reconstruction (repair) strategies, according to the Federal Highway Administration (FHWA). In Franklin County, it is extremely important to develop a plan for the region aimed at pavement management, because pavement is such a

significant capital investment and a critical component of our transportation infrastructure.

The relationship between pavement condition and cost is not linear. In other words, as pavement condition decreases, cost does not linearly increase. Rather, as pavement condition worsens, the costs to bring the pavement condition back up to excellent condition increases significantly. It is estimated that it will likely cost approximately 5 times more to repair pavement that has been allowed to deteriorate from a condition fair to very poor condition. Research in the field of pavement management has exhibited that a balance must be struck between maintaining roadways and repairing roadways in poor condition. Because it is so much more costly to reconstruct a roadway, the most cost effective approach would be to properly maintain all roadways before they reach that stage of debilitation. A PMS provides the framework and analysis for developing these regional priorities.

MassDOT and the FRCOG each have a history of conducting pavement management analyses throughout the county. Franklin County has a total of 432.71 miles of roadway that are eligible for federal funding. Table 5-4 presents a summary of roadway jurisdiction for federal aid eligible roadways in the county. Some pavement management data has been collected by MassDOT for a portion (15.75 percent) of these roadways in Franklin County using sophisticated data collection equipment. A special testing vehicle, the Automatic Road Analyzer (ARAN) collects pavement condition data and rates the pavement condition according to the Pavement Serviceability Index (PSI) on a 5 point scale. Based on this scale, roadway conditions are classified as poor, fair, good, or excellent.²

Data collected by MassDOT using this method includes approximately 65 miles of roadway in the county. This sample of roadways accounts for approximately 25 percent of federal aid eligible roadways as well as a variety of roadway functional classifications and can be used to estimate the general condition of roadways in the county. Of the

roadways that have been surveyed by MassDOT, pavement condition has been estimated for the region and is shown in Figure 5-1.

Table 5-4: Federal Aid Eligible Roadway Mileage, by Jurisdiction

Jurisdiction	Miles	Percentage
MassDOT	179.64	41.52%
Town	253.07	58.48 %
Total	432.71	100.00 %

Using this data collected by MassDOT, estimated pavement condition for the county can be deduced. As shown in Figure 5-1, the majority of roadways surveyed are categorized as in good (40 percent) or poor (34 percent) condition. Approximately 16 percent of roadways are in fair condition, with the remaining 10 percent of roadways in excellent condition.

Figure 5-1: Pavement Condition Estimates, 2010



In addition to MassDOT pavement management efforts, the FRCOG has been involved in pavement management since the early 1990s. In 1997, the FRCOG concluded a three-year contract with MassDOT that included the survey and analysis of nearly 500 miles of Federal-Aid and State Transportation Program (STP) funded roads in the 26 Franklin County communities. Since the completion of that contract, the FRCOG has

² MassDOT. Draft FFY 2011 – 2015 Highway Capital Investment Plan. May 2010.

continued its commitment to assist Franklin County communities who are interested in establishing a Pavement Management System for their community. Since 1997, the FRCOG has completed pavement management studies for the towns of Ashfield, Buckland, Colrain, Conway, Heath, Gill, Orange, Shelburne, Shutesbury, Whately and most recently Montague. The most recent study, completed in July 2006 for the Town of Montague, found that the town's 93 miles of paved roads were in an overall Fair condition with a \$5.7 million backlog of repairs.

The work completed as part of these pavement management studies included a visual assessment of the pavement conditions; a quantitative analysis of the condition; and a projection of future conditions based on varying levels of investment in repairs and maintenance. The visual assessment involves logging information on the extent and severity of pavement distresses. The future projection scenarios considered include examining ten years at current spending levels as well as looking at the cost to bring the road up to excellent conditions.

The FRCOG is currently working to restart a pavement management program for Franklin County and maintain a database of pavement condition on federal aid eligible roadways in the region. Federal aid eligible roadways in Franklin County will be continually monitored and surveyed on a three-year rotating basis and a database will be maintained. A regional report will outline the status of surveyed roadways as it becomes available.

In order to estimate the anticipated costs of repair and maintenance to bring roadways up to an excellent rating, cost estimates were calculated based on data collected by MassDOT on a sample of federal aid roadways in the county using cost estimates obtained from the Pioneer Valley Planning Commission (PVPC). Estimated maintenance and repair costs are shown in Table 5-5 for three maintenance strategies. These cost estimates are extremely approximate in nature as they are based on an estimated condition of the regional pavement system as well as approximate cost estimate figures.

Table 5-5: Pavement Management Repair Cost Estimates – Existing Conditions

Maintenance Strategy	Years	Description	Estimated Cost
<i>A: Stop further deterioration</i>	1-5	Bring roadways in good and fair condition to excellent condition; maintain roadways in excellent condition.	\$19,120,834
	6-10	Bring roadways in poor condition to excellent condition; maintain roadways already in excellent condition.	\$34,252,046
	Total		\$53,372,880
<i>B: Repair the best roadways first</i>	1-5	Bring roadways in good condition to excellent condition; maintain roadways in excellent condition.	\$10,610,319
	6-10	Bring roadways in poor and fair condition to excellent condition; maintain roadways already in excellent condition.	\$45,667,776
	Total		\$57,421,162
<i>C: Repair the worst roads first</i>	1-5	Bring roadways in poor and fair condition to excellent condition.	\$39,994,099
	6-10	Bring roadways which have deteriorated to good and fair condition to excellent condition; maintain roadways already in excellent condition.	\$25,701,473
	Total		\$65,695,572

Table 5-6: Sign Replacement Cost Estimates Based on Centerline Miles, per Town

Town	Regulatory Signs		Warning Signs		Guide Signs		Total Signs	
	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost
Ashfield	1285	\$ 19,273	343	\$ 42,657	86	\$ 6,424	1713	\$ 68,353
Bernardston	753	\$ 11,294	201	\$ 24,998	50	\$ 3,765	1004	\$ 40,056
Buckland	775	\$ 11,624	207	\$ 25,727	52	\$ 3,875	1033	\$ 41,225
Charlemont	776	\$ 11,642	207	\$ 25,769	52	\$ 3,881	1035	\$ 41,292
Colrain	1419	\$ 21,290	378	\$ 47,121	95	\$ 7,097	1892	\$ 75,507
Conway	1154	\$ 17,310	308	\$ 38,312	77	\$ 5,770	1539	\$ 61,392
Deerfield	1394	\$ 20,917	372	\$ 46,296	93	\$ 6,972	1859	\$ 74,185
Erving	315	\$ 4,728	84	\$ 10,464	21	\$ 1,576	420	\$ 16,768
Gill	629	\$ 9,428	168	\$ 20,868	42	\$ 3,143	838	\$ 33,439
Greenfield	1840	\$ 27,605	491	\$ 61,099	123	\$ 9,202	2454	\$ 97,905
Hawley	807	\$ 12,101	215	\$ 26,784	54	\$ 4,034	1076	\$ 42,920
Heath	939	\$ 14,089	250	\$ 31,183	63	\$ 4,696	1252	\$ 49,968
Leverett	621	\$ 9,315	166	\$ 20,617	41	\$ 3,105	828	\$ 33,037
Leyden	640	\$ 9,596	171	\$ 21,239	43	\$ 3,199	853	\$ 34,033
Monroe	301	\$ 4,514	80	\$ 9,992	20	\$ 1,505	401	\$ 16,011
Montague	1871	\$ 28,064	499	\$ 62,115	125	\$ 9,355	2495	\$ 99,533
New Salem	642	\$ 9,623	171	\$ 21,298	43	\$ 3,208	855	\$ 34,129
Northfield	1180	\$ 17,694	315	\$ 39,162	79	\$ 5,898	1573	\$ 62,753
Orange	1570	\$ 23,553	419	\$ 52,130	105	\$ 7,851	2094	\$ 83,533
Rowe	646	\$ 9,690	172	\$ 21,448	43	\$ 3,230	861	\$ 34,368
Shelburne	896	\$ 13,438	239	\$ 29,743	60	\$ 4,479	1194	\$ 47,660
Shutesbury	556	\$ 8,343	148	\$ 18,466	37	\$ 2,781	742	\$ 29,590
Sunderland	701	\$ 10,514	187	\$ 23,271	47	\$ 3,505	935	\$ 37,289
Warwick	1008	\$ 15,125	269	\$ 33,478	67	\$ 5,042	1344	\$ 53,645
Wendell	835	\$ 12,528	223	\$ 27,729	56	\$ 4,176	1114	\$ 44,433
Whately	561	\$ 8,411	150	\$ 18,615	37	\$ 2,804	748	\$ 29,829
County Totals	24114	\$ 361,707	6430	\$ 800,577	1608	\$ 120,569	32152	\$ 1,282,853

Notes: Cost estimates were calculated using centerline miles under Town Jurisdiction only and based on formulas provided by the FHWA in the *Sign Retroreflectivity Guidebook*. These formulas utilize the following assumptions: 10% of regulatory signs will need to be replaced; 83% of warning signs will need to be replaced; 50% of guide signs will need to be replaced; and estimated sign replacement costs, including materials and labor, are \$150 per sign.

requirement not only due to potential federal funding implications but also with regards to liability. The FHWA states that public agencies that demonstrate a reasonable maintenance policy, as outlined in the new regulations, should be better equipped to successfully defend against tort litigation involving claims of improper sign retroreflectivity. In short, these standards aim to improve traffic safety in all cities and towns during nighttime driving conditions.

These requirements have a phased-in compliance structure which consists of the following milestones:

- **January 2012:** By this date, all agencies will have to establish a sign maintenance program that can regularly address the new minimum sign retroreflectivity requirements.

- **January 2015:** By this date, all agencies must comply with the new retroreflectivity requirements for most of the traffic signs they have installed, including all red or white “regulatory” signs, yellow “warning” signs, and green/white “guide” signs.
- **January 2018:** By this date, all agencies must comply with the new retroreflectivity requirements for overhead guide signs and all street name signs.

Most immediately, by January 2012, agencies need to have a method in place to maintain minimum levels of retroreflectivity.

The additional costs of bringing signs into compliance by the prescribed dates can have significant financial implications for the towns. Table 5-6 presents an overview of estimated sign replacement costs for each community in Franklin County using formulas provided by the FHWA. It is recommended that towns begin to plan for sign replacement in town and department budgets, as well as explore additional financing mechanisms and purchasing options, such as cooperative purchasing.

Traffic Studies

Route 5/10 Corridor Plan

In 2008, two large parcels in Bernardston were designated Priority Development Sites under Massachusetts General Law Chapter 43D. This designation allows expedited permitting and incentives to encourage development and, thus, increase jobs and the tax base in the area. In response to this designation, the FRCOG undertook the Route 5/10 Corridor Plan to examine the current conditions (such as land use, zoning, and traffic operations) along the Route 5/10 Corridor in Bernardston, Gill, and Northfield (Route 5/10 runs the entire length of the county) and estimate how future development may impact the safety and efficiency of the transportation infrastructure. The plan documents the existing safety and operational conditions of the study area while also providing a glimpse into the future operations of the corridor in

light of potential future growth and development. The plan culminates with the presentation of several mitigation strategies aimed at reducing the negative impacts associated with future traffic growth and development.

Deerfield Level of Service Analysis

In 2010, the FRCOG conducted a Level of Service (LOS) analysis of the Route 5/10 Corridor in Deerfield as part of a Zoning exercise. The intent was to estimate the potential impacts of future development scenarios on the local transportation system. Since zoning guides development patterns and land use types, this exercise was designed to provide local officials with information about future zoning scenarios and the transportation related challenges that may result.

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG analyzes crash data from the Registry of Motor Vehicles for the twenty-six communities in Franklin County to identify intersections that have experienced a repeated occurrence of crashes. The study identifies the fifty most hazardous intersections and ranks them based on a calculated crash rate that takes into account the severity of each of the crashes, as well as the exposure to crashes based on traffic volumes. The most recent study was completed in 2009 and reviewed crash data from 2004 through 2006. This study is described more thoroughly in Chapter 13 – Transportation Safety. An update of the report, using the next set of available data, will be completed in 2012.

Road Safety Audits

The Road Safety Audit (RSA) process is an effective tool for improving traffic safety at specific locations and is a measure that has been supported for many years by MassDOT and the FHWA. With the intention of bring the RSA process to Franklin County, in 2010 the FRCOG performed a study, *Development of Safety Improvements for Hazardous Locations*, to identify specific locations that would benefit most from a RSA.

Since completion of the *Development of Safety Improvements for Hazardous Locations*, several RSAs have been conducted in Franklin County. To date, ten RSAs have been conducted in the communities of Deerfield, Greenfield, and Whately. More complete information about RSA activity in Franklin County can be found in Chapter 13 – Transportation Safety.

Planned and Completed Roadway Improvement Projects

Greenfield Intersection Improvement Project

Intersection improvements were completed in 2010 at eight intersections in Greenfield. Improvements included the installation of new traffic signals, resurfacing, curbing, drainage work, sidewalks, wheelchair ramps, signs and pavement markings that were geared towards improving the safety and efficiency at these intersections. More information about this project can be found in Chapter 13 – Transportation Safety.

Route 2 Safety Improvements

Since the formation of the Route 2 Task Force in 1994, the FRCOG has been working together with the communities along the Route 2 corridor from Philipston to Greenfield to create a safer roadway. Since that time, nearly \$70 million has been invested in constructing safety improvement in the corridor. The first improvements included numerous upgrades such as the installation of shoulder rumble strips, new signs and lines, tree clearing for improved visibility, and the installation of variable message signs. The first major construction project was the realignment of Route 2 around the Erving Paper mill, creating a safer climate for both through travelers of the roadway and the Mill's loading docks. This work was followed by the construction of climbing lane and intersection improvements and a truck weigh station in Athol, including installation of an innovative centerline treatment called "Qwick Kurb" along 13 miles of highway in Philipston and Athol. Next was the reconstruction of two bridges and lowering the profile of Route 2 in the Erving side area of Erving, along with the construction of

protected turn lanes, acceleration and deceleration lanes, and traffic flow improvements in the Erving side neighborhoods near the French King Bowling Alley. Currently under construction are improvements in Orange that include intersection and climbing lane improvements, as well as rehabilitation of the Route 122 Bridge. Designs for improvements in Erving Center and Farley are nearing the 25% design completion stage, and a round of public information meetings are being planned for the affected neighborhoods. Finally, some improvements in the Gill/Greenfield section are being completed as part of the rehabilitation of the Gill-Montague Bridge, however other improvements for this area are just in the preliminary planning stage. More detailed information about the Route 2 Safety Improvements and the Route 2 Task Force can be found in Chapter 13 – Transportation Safety.

Pedestrian Safety Improvements in Sunderland

Following the tragic death in December 2004 of a pedestrian crossing Route 116 in front of the 7-11 Plaza in Sunderland, the FRCOG assisted the Town of Sunderland and MassDOT in implementing several measures to improve pedestrian, bicycle, and vehicle safety at this location. The effectiveness of the installed safety improvements were evaluated by FRCOG and MassDOT. Both agencies determined that the implemented safety improvements had a positive impact on improving the safety along the corridor by decreasing crash frequency as well as crash severity. In other words, the number of crashes decreased and the type of crashes shifted away from the more dangerous angle type crashes to the typically less severe rear-end type crashes.

While the improvements were shown to improve the safety of the area, there was still some concern that more safety improvements could be made. This need for additional safety measures was revisited when, on September 8, 2009, two pedestrians were struck while crossing in the crosswalk on Route 116. Both pedestrians survived the incident; however, one had several injuries. This crash prompted additional discussions between MassDOT, the

Town, residents, and the FRCOG. The resultant solution was the installation of a traffic signal at the intersection of Squire Village Drive and Route 116, where the one crosswalk is located. The traffic signal was installed and activated on October 22, 2009. More information about this project can be found in Chapter 13 – Transportation Safety.

Retrofit of the Greenfield Rotary

Another major improvement project that has been recently completed is the redesign of the Route I-91/ Route 2 Rotary. The improvements were aimed at addressing safety issues, including trucks crowding out other vehicles on the rotary and the speed of circulating traffic. The projects included redesigning and clearly delineating travel lanes in the rotary, expanding or reconfiguring the exit/entrance ramps for I-91 and Routes 2 and 2A, and adding signage to better direct traffic flow. Initial evaluations of effectiveness after the improvements were installed are encouraging, however more data is needed in order to document the significance of the results. Additional follow-up will be conducted in upcoming years. More details about this project can be found in Chapter 13 – Transportation Safety.

Greenfield Mountain Climbing Lane

In the 2009 *Route 2 West Safety Study*, it was recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain. Currently, slow-moving traffic (usually freight trucks) going up Greenfield Mountain on Route 2, which has one lane in each direction, often use the roadway shoulder as a second travel lane. However, the shoulder is not wide enough to accommodate tractor-trailers, leaving these large trucks to straddle both the breakdown lane and travel lane, creating a hazardous situation as the faster moving vehicles in the travel lane are forced into the oncoming lane in order to pass. The *Route 2 West Safety Study* concluded that there is enough pavement width on the roadway to accommodate a climbing lane, but not enough to have a desirable shoulder width. The Study recommended that a climbing lane be created, even with a smaller shoulder, as this would be a safer alternative to the current situation.

Roundabout at Greenfield Community College (GCC) and Colrain Road

The intersection of Colrain Road and College Drive in Greenfield is located at the entrance to Greenfield Community College (GCC) and experiences delay and safety challenges. MassDOT has been working with the City of Greenfield to develop potential improvements to this intersection and has agreed upon the installation of a roundabout to enhance safety and improve traffic flow. The roundabout is currently under design with a projected cost of \$1.6 million.

Greenfield Road Improvements

The reconstruction of Greenfield Road in Montague consists of roadway reclamation and minor widening of approximately 2 miles from near Sherman Road south to Hatchery Road. Major elements of the project will improve safety at the intersection of Randall Road (site of a fatal crash), will widen shoulders to improve bicycle accommodation on this segment of the Franklin County Bikeway, and will ultimately connect to a new bicycle and pedestrian bridge under design for south of Hatchery Road. Design is underway and is challenged with some topography issues, but it is expected that the project should be ready to advertise by 2013-2014.

Route 2 Culvert Repair in Charlemont

Several culverts along Route 2 in Charlemont are listed in MassDOT's planned projects for repair or replacement, along with other work. Route 2, from Route 8A to South Street, is currently in the design phase for culvert repair as well as roadway resurfacing and related work. An additional culvert located on Route 2 (over Oxbow Brook and Wilder Brook) will be replaced and is currently listed in the 2011 TIP for advertising.

Recommendations for Road and Bridge Infrastructure

- Work with MassDOT to examine and implement, if feasible, the installation of a **climbing lane** up Greenfield Mountain on Route 2 west in Greenfield.
- Work with Towns to implement requirements of the **sign retroreflectivity** program.
- Conduct follow-up to determine the **effectiveness of improvements** at the Greenfield Rotary.
- Continue developing a **Pavement Management Program**.
- Update the Most Hazardous Intersections report using the next set of available data.
- Continue conducting **Road Safety Audits** to address safety issues in the region.
- Continue to staff the Route 2 Task Force and advocate for advancement of **additional safety improvements**.
- Support development of a **roundabout** at Greenfield Community College and Colrain Road.
- Support the **repair and replacement** of culverts along Route 2 in Charlemont.

6



Freight Transport

2012

REGIONAL TRANSPORTATION PLAN

6 Freight Transport

Freight transportation is an important issue for Franklin County. The accessibility and efficiency of freight transport plays a vital role in the economy and viability of the region. Most of the freight and goods coming to and from Franklin County are being transported by truck; however, a significant amount of freight that travels through the county is being hauled over its three main rail lines. A small volume of the freight is transported by airplane.

The Commonwealth of Massachusetts has just completed a *State Freight and Rail Plan* (September 2010) that comprehensively examines the state's freight transportation system. This Plan looks at all modes of freight transportation and analyzes issues and opportunities for growth. The Plan notes the significance of the freight transportation links that exist in Franklin County and identifies recommendations for both the region and the state, which will be incorporated into this chapter. The Plan estimates that total freight volumes in Massachusetts are projected to increase 70 percent by the year 2030. This large increase could have a significant impact on Franklin County with its major highway routes and railroad lines.

This chapter will discuss freight transport to, from, and through the region by truck, rail, and air. This chapter will consider opportunities to improve the safety and efficiency of freight movement in the region, and will also discuss the transport of hazardous materials in Franklin County.

Existing Conditions

Major Freight Modes

Trucking

The major trucking corridors in Franklin County are: Interstate 91 (which runs north-south) and Route 2 (which runs east-west). These two highways also represent the busiest travel corridors in the region for non-commercial traffic. Other active truck routes in the region include Routes 5/10, Route 47, Route 116, Route 63, and Route 112. There are

several truck parking facilities on most of the major routes in Franklin County. There are parking facilities located on Route 2 West (Charlemont, MassDOT Park & Ride), Route 2A (Greenfield, MassDOT Visitors Center), Route 116 (Sunderland), I-91 (Bernardston), and Route 5/10 (Whately). The Whately facility is located at the Whately Diner on Rt. 5/10, which is a full amenity truck rest stop with parking, refueling, showers, and food available.

Freight Rail

Franklin County has approximately 93 route miles of railroad, which are broken down into two north-south routes, one east-west route, and an east-west connector at the East Deerfield Rail Yard. This railyard is one of the largest railyards in New England. The map at the end of the chapter shows the location of the East Deerfield Rail Yard and the different railroad lines in Franklin County. There are three other minor rail yards in the county: in South Deerfield, Millers Falls, and Buckland. The first two are currently in use, each having only minor traffic. The Buckland Rail Yard, which is also the site of the Shelburne Falls Trolley Museum, is no longer active.



East Deerfield Rail Yard, in Deerfield

Air Transport

There are two public airports in Franklin County, located in the Towns of Orange and Montague; however, neither of these airports provides air freight service. All freight in the county that is transported by air must first be trucked to an airport outside of the region. The closest locations for freight transport are Bradley International Airport, located near Hartford, Connecticut, the Worcester Regional Airport in Worcester, and

Logan International Airport in Boston. New York City's major metropolitan area airports, LaGuardia Airport, J.F.K. Airport, and Newark Airport, also provide air freight transport services and are used by some shippers in the Franklin County region.

Freight Trucking

In order to provide safe and efficient transportation routes for trucks to and through the region, it is important that the region's infrastructure and systems are continually reevaluated for possible deficiencies or constraints. Improvements are undertaken as needed and as possible within given funding constraints. The following projects are major improvements that have been planned or have been recently completed with the goal of advancing the safety and efficiency for both general and freight highway transport.

Route 2 East Improvements

Several major improvements have taken place or have been planned for Route 2, the major east-west trucking corridor in Franklin County. Route 2 East refers to the stretch of Route 2 from Greenfield to Philipston. Several projects along this section have been recently constructed, are underway, or have been designed. These improvements focus on overall traffic safety and efficiency, as well as the relationship between freight trucking and non-commercial traffic.

One major Route 2 East project that has been completed was the relocation of Route 2 away from the Erving Paper Mill in Erving. The relocation was necessary to relieve the on-road blockage that occurred when freight trucks were loading or unloading at the mill. This project addressed the overall safety and efficiency of traffic on Route 2 by ensuring that freight deliveries to the paper mill do not create a hazardous impasse. The relocation was completed in November 2006 and truckers and motorists have indicated that it was a significant improvement over the previous roadway configuration.

Other recent improvements on Route 2 East include the addition of climbing lanes and turning lanes to improve the roadway's safety. The addition of

climbing lanes in Orange and Athol were designed to help address the issue of bottlenecked traffic when freight trucks slow on the steep inclines. Turning lanes have been added in Erving to decrease the hazard that unexpected stops and turns can have on traffic flow. Freight trucks are particularly susceptible to this, as they cannot slow the momentum of their vehicles quickly. Two bridges were also reconstructed in Erving, with the road profile lowered to improve sight distance. Additional turning lanes are planned for Farley and Erving Center and are currently under design.



New retaining wall along Route 2, in Erving

Another major improvement project that has been completed is the creation of a truck weigh station on Route 2 westbound in Athol. This was the first weigh station along the Route 2 corridor. The presence of the weigh station will help ensure that freight trucks on Route 2 are not carrying excessive weight that could potentially cause safety issues along the corridor or damage the highway infrastructure, such as its many bridges.

Safety improvements are currently underway on Route 2 in Orange. These include exit and climbing lane improvements. These projects will make the exits safer by decreasing the severity of the exit ramp curves, which are particularly important for top-heavy vehicles such as freight trucks. The location of the improvements is significant since one of the selected exits, the Route 202 interchange, is near a large industrial park, thus increasing the volume of freight trucks using the exit. More information on the Route 2 East

improvements can be found in Chapter 13: “Transportation Safety” of this RTP.

Route 2 West Improvements and Studies

Improvement projects have also been completed, designed, or explored for Route 2 West, which in Franklin County spans from Greenfield to Charlemont. During the creation of the 2003 Regional Transportation Plan, a number of issues related to the safe and efficient movement of freight by trucks on Route 2 West were identified. Improvements have taken place to address some of these issues, but further exploration and funding is needed to address all of the identified problems.

Along Route 2 West in Charlemont, there were three bridges that needed either replacement or rehabilitation. Due to their poor conditions, all three had weight restrictions that limited their use by heavy freight trucks. These projects have now been completed with designs to ensure safe passage for freight trucks and other vehicles.

Another major improvement project along Route 2 West that has been recently completed is the redesign of the Route 2 Rotary. The improvements were aimed at addressing safety issues, including trucks crowding out other vehicles on the rotary. The projects included redesigning and clearly delineating travel lanes in the rotary, expanding or reconfiguring the exit/entrance ramps for I-91 and Routes 2 and 2A, and adding signage to better direct traffic flow. The project also redesigned Route 2 at Colrain Road, just west of the rotary, to facilitate trucks turning onto Colrain Road and to add pedestrian facilities. Recent studies and anecdotal evidence have shown that this project has been a large success in terms of safety.

The FRCOG has performed several preliminary studies regarding further improvements along the Route 2 West corridor. In the 2009 *Route 2 West Safety Study*, it was recommended that a climbing lane be added to the westbound lane of Route 2 over Greenfield Mountain. Currently, slow-moving traffic (usually freight trucks) going up Greenfield Mountain on Route 2, which has one lane in each direction, often use the roadway shoulder as a

second travel lane. However, the shoulder is not wide enough to accommodate tractor-trailers, leaving these large trucks to straddle both the breakdown lane and travel lane, creating a hazardous situation as the faster moving vehicles in the travel lane are forced into the oncoming lane in order to pass. The *Route 2 West Safety Study* concluded that there is enough pavement width on the roadway to accommodate a climbing lane, but not enough to have a desirable shoulder width. The *Study* recommended that a climbing lane be created, even with a smaller shoulder, as this would be a safer alternative to the current situation.



Truck climbing Greenfield Mountain along Route 2

Additionally on Greenfield Mountain, there has been concern about safety issues related to trucks traveling eastbound down the mountain towards the congested commercial area just prior to the rotary. This section of Route 2 has a steep 6 percent grade and the concerns were related to trucks' ability to safely brake before the congested area. The *Route 2 West Safety Study* recommended that ITS (Intelligent Transportation Systems) be installed on Route 2 eastbound coming down the mountain to warn freight truck drivers if they are at risk of overheating their brakes as they travel down the incline. In the *Safety Study*, it was determined that a truck escape route was not justified at the time.

Challenges to Freight Trucking

Aside from Route 2, there are other locations in Franklin County that present challenges to freight trucking, and may need improvements. In many cases, roadways are too narrow or intersection widths inadequate for freight traffic and turning. In other cases, bridges have insufficient clearance for

larger vehicles. Below are a few specific constraints associated with freight trucking:

- Bank Row, Greenfield: There is a clearance problem with the train overpass. Freight trucks are forced to avoid this central artery to downtown Greenfield. This site has not yet been identified as a priority bridge improvement.
- Main Street onto Chapman Street, Greenfield: It is difficult for tractor-trailers to make this turn because of parking on both sides of the street. Because of the intersection's downtown location, the removal of on-street parking is not a desirable option.
- Turners Falls Road, Montague: Trucks traveling north on Turners Falls Road have difficulty turning onto Turnpike Road. This intersection has not yet been planned for improvements.
- Montague City Road and Cheapside Street intersection, Greenfield: There is a low bridge at the curve where Montague City Road and Cheapside Street intersect. The low bridge limits truck access to the nearby industrial area, and as a result, trucks often need to use long alternative routes. Options such as raising the bridge or lowering the road would pose significant challenges. Another option, which has been mentioned, is widening the sharp curve. This intersection needs further study before improvements can be planned.
- General Pierce Bridge, Greenfield: This bridge is currently under preliminary design for a major rehabilitation that will take place once the reconstruction of the Gill-Montague Bridge has been completed. At the public forums for this RTP, local trucking companies expressed concern with the current weight limit on this bridge, which is 36 tons. For larger trucks that exceed this, they must use an alternate route on Mountain Road, which was not designed for large trucks. To resolve this conflict, there are two options. The first is to raise the railroad bridge on Cheapside Street to 13'6". The other option is to increase the weight limit on the General Pierce Bridge, when it is rehabilitated, to 49 tons.

- Iron Bridge, Shelburne Falls: The historic iron bridge separating the towns of Shelburne and Buckland in Shelburne Falls is a historic bridge that was rehabilitated in 1997. Its low clearance prevents larger trucks from accessing the Buckland side of Shelburne Falls from Route 2/Maple Street. Trucks must travel further west on Rt. 2 and enter Buckland via State Street to avoid being stuck at the Iron Bridge. Better signage and information provided by GPS companies is needed to help freight trucks access the correct side of Shelburne Falls by the correct exit from Rt. 2.

Scenic Byways

Another issue related to freight transport involves the region's many scenic byways and the fact that these scenic byways are located on roadways that also serve as major trucking routes. There is one nationally-designated and four Massachusetts-designated scenic byways that run through the county. Scenic byways represent travel corridors with unique scenic, cultural, and tourism value. A possible conflict exists along these byways in that they call for an increased sensitivity to, and preservation of, rural and scenic qualities while also serving as major trucking corridors. Although no significant changes in freight trucking routes are recommended at this time, the special characteristics of scenic byways needs to be taken into consideration when planning improvements for these roadways. For more information on Franklin County's scenic byways, please refer to Chapter 15: "Scenic Byways and Tourism."

Transportation of Wide Loads

The Commonwealth of Massachusetts Commercial Motor Vehicle Center is responsible for permitting the transportation of non-reducible loads, also referred to as "wide-loads." If a transporter wishes to move a load of twelve feet or more in width over state highways, they are required to apply for a "daily trip" permit. In Franklin County, wide loads are permitted only on Interstate 91, Route 2, and Route 116.

The transportation of wide loads is a growing issue of concern for Franklin County. Many of the wide-load trucks today are trailers that are 53 feet in

length or longer and which cannot be accommodated on most roads in Franklin County, or much of New England. As trucks become even bigger, it is impractical, and in many locations not possible, to widen and straighten local rural roads to accommodate large-sized trucks. The wide loads are larger than one lane width and therefore can crowd other vehicles, forcing them aside as they pass through.

The increasing interest of renewable energy powered by wind also has a potentially significant impact on the type and number of wide loads passing through Franklin County. Franklin County, especially the western portion of the county, and neighboring Berkshire County are rich in wind resources. Wind turbines have already been installed locally, such as at Berkshire East Ski Resort in Charlemont, and large-scale wind farms have been planned for the Towns of Monroe and Hawley and their neighboring Towns of Florida and Savoy. The wind turbines are constructed on-site with very large prefabricated components. These individual components can range from 115 to 160 feet in length and must be transported via roadway to often remote areas. For comparison, the average 18-wheeler tractor-trailer ranges in length from 70 to 80 feet in length from the front of the cab to the end of the trailer. The recently constructed wind turbine at Berkshire East is 277 feet tall with the blades completely vertical. To construct the structure, 17 truckloads delivered parts to the site.¹ As more wind turbines are planned for sites in Franklin County and adjoining regions, the issue of transportation of turbine segments is a large one. A study should be performed examining which roads would be best suited to handle the unique demands of these loads.

Freight Rail Transport

While the vast majority of freight is shipped by truck in New England, MassDOT has projected that the amount of rail freight shipments will double over the next 20-30 years. This increase could have a significant impact on Franklin County as two

major New England rail lines pass through the region.

Rail Lines

As highlighted earlier, Franklin County has 93 route miles of railroad, including two north-south routes and one east-west route. There is a map of the rail lines at the end of this chapter. The north-south routes are the Connecticut River Main Line (owned by Pan Am Railways) and NECR Main Line (owned by New England Central Railroad). The east-west line is the Freight Main Line route for Pan Am Southern. This route runs along Route 2 and follows the Deerfield River. A small east-west/north-south connector, the East Deerfield Route, is also owned by Pan Am Railways.

The following information on the three primary rail lines in the county is based on information from MassDOT's *Massachusetts State Rail Plan* (Sept. 2010):

- Freight Main Line: (also known as the "Patriot Corridor") This rail line is owned by Pan Am Southern (PAS), which is a joint venture between Norfolk Southern and Pan Am Railways (PAR) that was formed in 2008. A part of this joint venture includes the rehabilitation of 138 miles of track, replacement of ties, and the addition of over 35 miles of new rail between Ayer, MA and Mechanicville, NY. These improvements will allow for increased freight capacity to be transported with a higher 286,000 pound weight limit and first generation double-stack capability. The improvements will also increase track speeds. The joint venture will create another Class I freight railroad in Massachusetts for increased competition.
- East-West Freight Main Line: the railroad's most important line in the Commonwealth of Massachusetts – serving up to 5 million tons annually of freight between eastern Massachusetts and eastern New York (near Albany) at Rotterdam Junction. It provides an important link for the paper and lumber industries in northern New England and Canada. There are two east-west rail lines in Massachusetts (the other roughly follows

¹ Broncaccio, Diane, "Tower of Power," *The Recorder*. December 2, 2010.

the Massachusetts Turnpike), but this route has less severe grades because of the it is 4.75 mile long Hoosac Tunnel that runs through, rather than over, the Berkshire Mountains. While the Hoosac Tunnel is an important advantage for this line, it does limit the freight capacity that can be hauled due to tunnel height restrictions (19'6"). At Ayer this line branches off to Boston, Lowell (NH) and Maine.

- Connecticut River Main Line: This rail line is owned by Pan Am Railways (PAR). PAR is a Class II rail carrier with connections to the NECR rail line in and Northfield. This line will soon also be carrying passenger rail due to funding received from the 2010 American Recovery and Reinvestment Act (ARRA), which will fund track improvements and passenger platform construction along the line. One of the passenger rail stops will be in Greenfield at the newly constructed Franklin Regional Transit Center. The track improvements will also allow for greatly increased speeds along this line for freight traffic.
- NECR Main Line: This rail line is owned by New England Central Railroad (NECR), which is a Class III railroad. The line is composed of 53 miles of right-of-way between Monson and Northfield. It has a major rail facility located in Palmer in Hampden County, where it interchanges with CSX. The line also interchanges with PAR in Northfield and Montague in Franklin County. These large numbers of connections makes this line competitive with the national rail system. This line is also a major north-south corridor for the New England region, connecting Canada with Connecticut and New York. Average annual freight rail tonnages is 1.3 million tons, much of it composed of lumber products and lime slurry shipped from Canada.

Railyards

There are limited public railroad loading areas suitable for transloading in Franklin County. A transloading facility refers to a terminal where freight is transferred from one mode to another. Transloading facilities enable companies that are

not located along rail lines to combine lower cost rail hauling with truck delivery. Typical goods that move through transloading terminals include: lumber, sheetrock, plastic pellets, bulk paper rolls, pipes, and bulk liquids such as fuel oil.² Modern transloading facilities are accessible to major highways, have many tracks, covered warehousing, and room for storing and moving tractor-trailers. While Franklin County does not have a transloading facility, below is an inventory of the rail facilities in Franklin County and a general evaluation of the facility's potential for transloading freight.

- East Deerfield Railyard: The East Deerfield Railyard, located off River Road, is partially owned by the Commonwealth (MassDOT), but is subject to permanent easement for railroad uses by Pan Am Southern. The railyard is located on the Freight Main Line that travels east-west and is connected to the Connecticut Main Line that travels north-south. The yard is approximately one and a half miles long and a half-mile wide. It has the capacity to sort and hold up to 900 rail cars per day. Approximately 600 to 900 cars pass through the yard on a daily basis. The railyard is used primarily as a classification yard for trains coming from the Pan Am north-south and east-west main rail lines. There are several public unloading tracks, and other tracks with the potential for public unloading. Only one track appears to be used for unloading now, primarily for unloading sodium chloride. The East Deerfield Railyard is located between two rivers (the Connecticut and Deerfield) on the east and west, wetlands on the north, and a residential neighborhood on the south. The road access to the railyard was improved in 2003 as a result of a project that increased bridge clearance at the River Road bridge. This helped immensely in providing direct road access from the facility to the Route 5/10 corridor and Greenfield. The Deerfield Master Plan (2000) suggested that the railyard could be an appropriate location for a future transloading facility. The railyard

² Indus-Rail Co., Preliminary Report Freight Diversion Study, conducted for the Franklin Regional Council of Governments, 1999, p. 5.

was used for some transloading of freight historically. A modern transloading facility would require additional storage space and equipment at the railyard, but is feasible for the site. One result of a new transloading facility would be increased traffic in and out of the railyard. Another concern of expanding the facility is the potential for contamination and adverse impacts on the natural resources in the vicinity, including the Deerfield River (located ¼ mile west from the railyard) and the Connecticut River (located ¼ mile east and ½ mile to the north of the yard).

- **South Deerfield:** There is a small rail facility in South Deerfield, off of Elm Street and Tine Drive. The facility has two public unloading tracks and a small amount of use. The access is poor to both tracks and there are no storage capabilities. The site was used for small-scale transloading historically, but would likely not be suitable for a larger-scale facility now.
- **Millers Falls:** The Millers Falls railyard is located off of East Main Street, at the junction of two major railroad lines, the NECR and the PAR. The yard includes a disconnected facility with a dock and ample trailer storage on the PAR side. NECR has three public railroad tracks used for unloading sodium chloride with poor track access and limited trailer storage.
- **Buckland:** There is a small railyard in Buckland, off of Depot Road, at the site of the Shelburne Falls Trolley Museum. The yard, which was last used for transloading in 1987, includes four tracks adjacent to the PAS east-west Freight Main Line. The yard is owned by a private firm. The road access from the facility to Route 2 is poor and travels through the densely developed village of Shelburne Falls. The facility would need significant upgrading to be a viable transloading facility.

Current Activities and Future Planning

Transport of Hazardous Materials

In August 2006, the Franklin County Regional Emergency Planning Committee (REPC) completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the FRCOG. The development of the HMEP served several purposes, including compliance with the statutory requirements that all regional Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize Hazardous Materials release reporting, notification, and response.

Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times and that, consequently, any rail line or roadway can be a potential hazardous material spill site.

Table 6-1: Estimated Level of Hazardous Material Transport on Area Roadways

Roadway	Number of Tank or Van Trucks Carrying Hazardous Materials per Hour
Interstate 91	10
Route 2	2
Other major roadways (Route 5/10, 63, 47, 116, 202, 8A, 78, 122, 142, 2A)	1 or 0

Based on a one-time survey conducted in 2003. Source: Franklin County Regional Emergency Planning Committee, "Franklin County Hazardous Material Emergency Plan and Maps," 2006.

Table 6-2: Estimated Level of Hazardous Material Transport on Area Rail Lines

Rail Line	Trains per Day (General Merchandise)	Average Number of Cars per Train	Average Number of Cars per Train with Hazardous Material
PAS Freight Main Line	10 – 24	50	4
Connecticut River Main Line	2 – 3	30	2
East Deerfield Rail Yard	10 – 15*	n/a	2 – 5
NECR Main Line	2	60	5

*Trains passing through the yard. Based on a one-time survey conducted in 2003. Source: Franklin County Regional Emergency Planning Committee, "Franklin County Hazardous Material Emergency Plan and Maps," 2006.

The HMEP includes an analysis of the level of hazardous materials transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. The only known significant transportation change since the 2006 HMEP report is the increase in ethanol transport by rail through the county. A training activity to address this topic is planned within the next year, according to the Chair of the Franklin County Emergency Preparedness Committee.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted a number of training exercises in the last few years for dealing with chemical spills. In 2004, in the first such training exercise in more than a decade, FRCOG and the REPC conducted a full-scale training exercise at

the Buckland Trolley Museum Railyard in Shelburne Falls. The exercise provided an opportunity to practice chemical spill response through a scenario of a chemical leak caused by a car crash with a rail tank car on an active rail line. The exercise was attended by responding departments from surrounding towns, the regional district (District 4) Hazardous Materials Team, and rail employees.

Since the completion of the HMEP in 2006, mock chemical spill exercises have been carried out for four Franklin County communities as part of implementing the plan. These exercises were designed to test the regional preparedness for dealing with chemical releases and the coordination of different agencies in addressing such situations and in dealing with evacuations.

Franklin County experienced a real chemical spill in 1999 when a train derailed in Charlemont and dumped an estimated 6,000 gallons of liquid latex into the Deerfield River. In September 2006, a freight train headed to the East Deerfield Railyard derailed onto its side with 20 cars carrying feed grain and vegetable oil going off the tracks. Fortunately, none of the cars ruptured. The rapid response to this derailment demonstrated the good coordination between local, regional, and state officials. The REPC has been called out on nine different occasions since 2007 to assist with chemical incidents in Franklin County.

Freight Diversion

Throughout New England, trucking is the predominant means of transporting freight. One of the recommendations of the Massachusetts *State Freight and Rail Plan* is to increase the amount of freight shipped by rail, rather than by truck. The Plan found that reducing the amount of truck shipping in the state would have many benefits, including: improved air quality, decreased highway maintenance costs, reduced fuel consumption (rail has 1.9 to 5.5 time greater fuel efficiency), and reduced shipping costs (rail is 50 percent less than

improvements needed to increase the use of rail in the county.

Statewide Freight Transportation Planning

MassDOT has recently completed the Massachusetts *State Freight and Rail Plan*. This plan sets state priorities for freight by all modes within Massachusetts. As part of this planning process, MassDOT also produced a stand-alone *State Rail Plan*. These plans have identified goals, issues, and recommendations for freight transport, some of which have been highlighted below.

Goals

- Reduce delays and bottlenecks
- Provide competitive, low-cost shipping to Massachusetts' industries
- Promote transportation with less environmental impact
- Encourage effective shared use of rail

Issues

- Poor air quality and increased carbon emissions associated with trucking
- Increased costs of pavement and bridge maintenance with trucking
- Weight and height restrictions on rail lines constrain freight shipping by rail
- Larger size of new rail cars make rail transport in Massachusetts more expensive due to size limitations on its railways (exception-loading)

Recommendations

- Increase the share of rail freight transport in Massachusetts
- Upgrade railways to accommodate larger rail cars
- Develop a state-wide inventory to identify sites suitable for large-scale freight uses
- Adopt a freight-intensive land use program that would preserve rail access to businesses

Recommendations for Freight Transport

- Work with MassDOT and the Town of Greenfield to create a **climbing lane along Route 2 West** up Greenfield Mountain.

- Investigate the feasibility of installing **ITS on Route 2** eastbound heading down Greenfield Mountain to aid trucks in braking safely.
- Continue to assist with the current and planned improvement projects in **Route 2 East** and to monitor how they impact freight trucking.
- As more data becomes available, continue to monitor the **Greenfield Rotary** and assess its impact on truck traffic and safety.
- Continue to work with local communities and highway officials to address **safety concerns related to trucks transporting wide loads** through Franklin County.
- Conduct an inventory of roads in Franklin County that can potentially accommodate **wide loads for wind turbine transport**.
- Continue to monitor and assess the **transport of hazardous materials** in the region and to develop, update, and coordinate plans with the Regional Emergency Planning Committee and appropriate agencies for responding to a hazardous materials spill.
- Conduct an update of the **Freight Users Survey** and more fully assess the potential for diversion of rail freight and transloading facilities.
- Conduct a study to assess which **roadway crossings of rail lines** are potentially the most hazardous, and to recommend changes to improve the safety of these locations.
- Rehabilitate the **General Pierce Bridge** with an increased weight limit of 49 tons to make truck shipping through the region more efficient and safe.
- Evaluate the options of improving the **Montague City Road and Cheapside Street** intersection, where a low bridge impedes truck traffic.

7



Passenger Rail

2012

REGIONAL TRANSPORTATION PLAN

7 Passenger Rail

Railroads have a long and proud history in Franklin County dating back to the 1840s. In 1920, there were four separate railroad companies offering freight and passenger service to several towns in Franklin County, and as many as seventy trains a day operated in all directions. Today, Amtrak, the national passenger rail corporation, operates two trains daily that pass through, but do not stop, in Franklin County on their travel between Washington, D.C. and St. Albans, Vermont. That is all about to change, however, as federal stimulus funding from the American Recovery and Reinvestment Act (ARRA) was approved in 2010 for upgrades to the Connecticut River Line train tracks, as well as for station development in Holyoke, Northampton, and Greenfield.

Existing Conditions

Since the late 1960s, passenger train service has gradually decreased in most areas of the United States. Franklin County has been no exception, going through a number of evolutions that eventually resulted in no passenger train stops in the county at all. Currently, the only passenger service in the region is operated by Amtrak as the “Vermont,” and it has no stops in Franklin County. This route is heavily subsidized by the Vermont Agency of Transportation, and travels between Washington D.C. and St. Albans, VT via Philadelphia, New York, and Springfield. The nearest train stops to Franklin County are Amherst, MA to the south, and Brattleboro, VT to the north. This route used to connect to Montreal, Canada, first by train, and later by bus. However, in 2004, the connecting bus service to Montreal was discontinued. As a result, the Vermont service no longer provides a connection to Montreal. Franklin County passengers wishing to board a train bound for Montreal must first travel to Albany, New York or New York City for that connection.

Historically, passenger rail service in Western Massachusetts traveled north-south along what is known as the Connecticut River Line. This line roughly parallels Interstate 91 and the Connecticut

River from New Haven, CT to St. Albans, VT and beyond. Today, the Vermonter still follows this line except for one distinct exception. During the 1980s, due to a series of unresolved disputes regarding track maintenance, Amtrak relocated service away from the Connecticut River Line, traveling inland from Springfield, MA to Palmer, MA, where it turns north and rejoins the Connecticut River Line in East Northfield, MA. This detour adds approximately 25 minutes to each one way trip. Currently, the Vermonter stops in Springfield, MA, Amherst, MA, and Brattleboro, VT once per day in each direction. The times of the stops are once in the late morning (southbound) and once in the late afternoon (northbound).

Current Activities and Future Planning

New England High-Speed Rail and Intercity Rail Network Vision

The six states in New England have come together to create a Vision for a future regional rail system that will enhance New England in many ways, including: providing a foundation for economic competitiveness; promoting livable communities; and improving energy efficiency and environmental quality. This Vision is based around a high-speed rail network that will link every major city in New England with smaller cities and rural areas and internationally to Montreal. This high-speed rail network is composed of a few key corridors, several of which directly and indirectly affect Franklin County. The following Figure 7-1 illustrates the envisioned network of corridors linking all of New England. This Vision was developed by the six Departments of Transportation of the New England states, who have committed to work together to coordinate efforts. The Vision includes the following key corridors and projects:

- New Haven-Springfield Corridor Improvements
- Knowledge Corridor Improvements (Springfield, MA to White River Junction, VT)
- Vermonter/NECR Passenger Rail Improvements (eventual extension to Montreal)

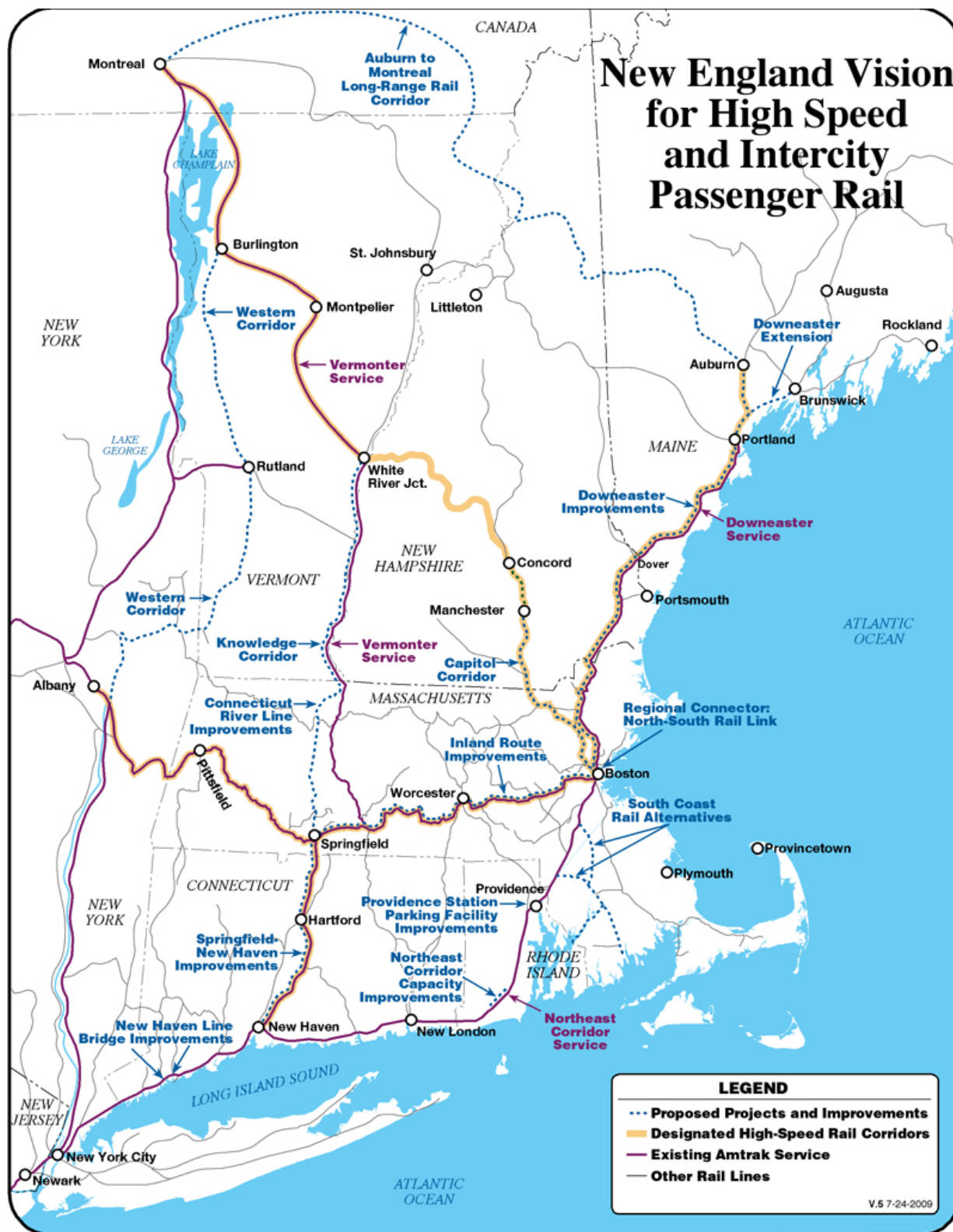


Figure 7-1: Map of New England Regional High Speed and Intercity Rail System

Source: New England Vision for High Speed and Intercity Passenger Rail, collectively developed by the State Departments for Transportation in Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

- Inland Route Service Improvements (Springfield to Boston)
- Downeaster Improvements (with eventual extension to Brunswick, ME)
- Western Corridor (Albany, NY to Burlington, VT)
- Capitol Corridor (Boston to Concord, NH with eventual extension to Montreal)

The following section discusses in detail several of these corridors and projects that directly and indirectly impact Franklin County.

New Haven-Springfield Commuter Rail Implementation

Part of the Vision for the New England High-Speed and Intercity Rail Network is the New Haven-Springfield commuter rail line. Formal planning for improvements to this corridor has been in progress for the last six years. Just recently, \$161 million in federal funding was awarded to begin implementation of the planning studies to make this corridor into a high-speed commuter rail line. The State of Connecticut has also committed \$266 million in state bonding for further implementation.

Project History

In June 2005, the Connecticut Department of Transportation (ConnDOT) completed an implementation study for commuter rail service between New Haven, Connecticut and Springfield, Massachusetts. In its Regional Transit Strategy (2001), the Capital Regional Council of Governments (CRCOG) which serves the Hartford metropolitan area, identified improvements to the New Haven to Springfield rail corridor as a key strategy for increasing and sustaining the region's economic vitality and enhancing regional livability. The *New Haven-Hartford-Springfield Commuter Rail Implementation Study* (2005) was prepared by Wilbur Smith Associates and overseen by a Steering Committee. The Steering Committee was comprised of representatives from regional planning agencies and communities along the corridor, from the Federal Transit Administration, the Federal Railroad Administration, Amtrak, and rail freight carriers including Pan Am Systems and CSX, the Peter Pan

Bus company, and state and federal environmental agencies.

The Commuter Rail Implementation Study evaluated the ridership, impacts, and costs of providing commuter rail service from New Haven to Hartford to Springfield, and explored various service options. The study included an analysis of current track and station conditions, a description and assessment of current service and future potential service alternatives, and strategies for integrating any new service with the existing system. The study also forecasted the potential future ridership, operating costs and revenues under different service alternatives, and preliminarily identified the potential environmental impacts associated with the commuter rail service. The report also identified potential funding sources for service expansion, recommended the next steps for implementing the study, and provided conceptual station plans and suggestions for new double track locations.

The New Haven to Springfield commuter route is composed of 62 miles of existing rail infrastructure that are currently owned and operated by Amtrak. This rail line, which is often referred to as the "Springfield Line," travels from Union Station in New Haven, CT through numerous towns and cities to Union Station in Springfield, MA. The new rail service is envisioned to provide future commuter rail access to the towns and cities along the rail corridor; multiple links to Amtrak's Intercity service; direct links to the existing Metro North Railroad and Shore Line East Commuter Rail services in New Haven; and a connection to the proposed New Britain-Hartford Busway.

Current Project Status

In August 2010, ConnDOT completed a *Service Development Plan for the CT New Haven-Hartford-Springfield (NHHS) Corridor*. Much of the Commuter Rail Implementation Study's recommendations were incorporated into this Plan. They include the following key elements:

- Increase one-way intercity trains from 12 to 24 per day;
- Add 21 one-way commuter trains per day;

- Reinstall 24.5 miles of double track on existing single track locations;
- Increase the number of rail stations served by rail from 8 to 13;
- Have all stations incorporate high-level platforms and grade-separated pedestrian facilities;
- Improve the existing station in Windsor Locks to accommodate bus transfers from the station to Bradley Airport; and
- Revise local bus routes to provide bus service to the rail stations.

ConnDOT is currently completing an Environmental Assessment of the proposed rail improvements and should be completed by the Spring of 2011. The total cost of the project is estimated to be \$480 million. As mentioned, the State of Connecticut has agreed to provide \$260 million in funding and the federal government has provided an additional \$161 million in funding through federal stimulus funding from the American Recovery and Reinvestment Act (ARRA) for the needed track upgrades. Together, these funding sources make up almost 80 percent of the needed funding for improvements to this rail line. It is expected that preliminary engineering and NEPA efforts will be completed in May 2011. Construction contracts will be awarded in 2013 through 2015. Operation of the new high-speed rail system should begin in 2016 with all construction completed by 2018.

Knowledge Corridor/Connecticut River Line Passenger Rail for Springfield, Massachusetts to White River Junction, Vermont

Another integral element of the New England Vision for an Intercity Rail Network is the "Knowledge Corridor" that runs from Springfield, MA to White River Junction, VT. The Knowledge Corridor, named for the high number of colleges and universities in the area, runs along the Connecticut River Rail Line. In January of 2010, the Commonwealth of Massachusetts was awarded \$70 million to make improvements to the rail line to extend and restore passenger service. The funding will be used to relocate the existing Amtrak passenger train service, known as the Vermonter, back to its former route along the Connecticut River Line. The current route of the Vermonter was

detoured through Palmer many years ago. The restored alignment will cut 25 minutes per trip and add stops in Northampton, Holyoke, and, most importantly for Franklin County, Greenfield.

Project History

Federal transportation funds were awarded in Fiscal Year 2006 to examine the possible extension of passenger rail service north of Springfield, MA along the Connecticut River and Interstate 91. The Pioneer Valley Transit Authority (PVTa) was granted \$750,000 in congressional earmark funding to complete a feasibility study examining the potential for improved passenger rail service between Springfield, MA and White River Junction, VT along the I-91 corridor. This rail corridor currently has limited passenger rail service; Amtrak's Vermonter line makes one northbound trip and one southbound trip daily along the route, with two stops in Western Massachusetts, in Springfield and Amherst.



Amtrak Train in Northfield

The passenger rail feasibility study, which was coordinated by the PVTa and the Pioneer Valley Planning Commission (PVPC), included the whole 186 mile corridor between the Massachusetts/Connecticut State Line and White River Junction. The route travels through the Connecticut River Valley, and connects Springfield, Chicopee, Holyoke, Northampton, Deerfield, Greenfield in Massachusetts and Brattleboro, Bellows Falls, and White River Junction in Vermont.

The feasibility study examined three aspects of rail service along the Knowledge Corridor:

- The relocation of the Amtrak Vermonter back to the Connecticut River line route;
- The establishment of a commuter rail service beginning north of Springfield; and
- Increasing intercity passenger rail service along the entire north-south corridor, beginning in New Haven, CT to White River Junction, VT.

The feasibility study primarily focused on the relocation of the Vermonter with an added round trip per day to make two round trips per day along this line. The study found that in order for this to occur, improvements would have to be made to the line; including: crosstie and rail replacement, rehabilitation of grade crossings, reactivation of passing sidings, upgrading of switches and signals, and improvements to bridges. These improvements would also allow freight trains to be operated at a much faster 60 to 70 miles per hour, rather than the current 10 miles per hour.

The establishment of additional passenger rail service along the Connecticut River Valley Line would help promote transit oriented development patterns. Enhanced passenger rail service would also provide Franklin County residents with transportation options beyond the private automobile for intra-region and inter-region travel. Additionally, improvements to the track along this route would provide an opportunity to improve the freight service along the rail line. This could provide an opportunity to encourage some freight trucking shippers using I-91 to switch to rail transport, thereby reducing the future maintenance and repair costs along the interstate, and the environmental and other negative impacts of truck transport.

The FRCOG has served on the project team overseeing the Connecticut River/I-91 Rail Feasibility Study, and transportation officials from the PVPC, the PVTA, and the States of Massachusetts, Connecticut, Vermont and New Hampshire have also been involved. The States of Vermont and New Hampshire have, for some time, recognized the importance of developing viable

passenger rail service along the Connecticut River Valley to the Hanover, NH/White River Junction, VT area.

Current Project Status

As mentioned, \$70 million in federal stimulus funding was awarded to the Commonwealth of Massachusetts in 2010 to begin rail improvements to restore passenger rail service to the Knowledge Corridor. This effort is being closely coordinated with the State of Vermont, who was also awarded \$52 million in federal stimulus funding to make track, roadbed, and bridge improvements to the current route of the Amtrak Vermonter. With the relocation of the Vermonter back to the Connecticut River Line, it is expected that the shortened trip length will increase ridership by 23 percent. Construction on the needed improvements to the line began in 2010 and should be completed by 2012, when service is anticipated to start with one round trip per day. It is hoped that this will be increased to three round trips per day by 2015.

Inland Route: Boston-Springfield-Hartford High-Speed Rail Corridor Feasibility Study

The Inland Route, which travels from Boston to Hartford via Springfield, is another component of the New England Vision for High-Speed and Intercity Passenger Rail. A \$1.72 million grant was awarded in 2010 from the Federal Rail Administration (FRA) to conduct a high-speed rail feasibility study for the Hartford-Springfield-Boston corridor. The PVPC is serving at the lead agency for this study and has contracted the work to HDR, Inc. The feasibility study should commence in the Spring of 2011 and be completed by the Fall of 2012.

The study is seen as a followup activity to the *Service Development Plan for the CT New Haven-Hartford-Springfield (NHHS) Corridor*, which will extend commuter rail service from Connecticut north to Springfield, MA. It also ties into the Knowledge Corridor/Connecticut River Line improvements. The Boston-Springfield-New Haven corridor historically was a key part of the Northeast Rail System, and provided one of the earliest rail

East-West Passenger Rail

Unfortunately, this east-west route is not part of the recent New England Vision for High Speed and Intercity Passenger Rail and has therefore not received comparable attention or funding as the north-south routes in the region. However, there is definitely a demand for east-west

- In a survey conducted for the RTP update, the restoration of an east-west passenger rail service was in the top three of recommendations for improvements to the county's transportation infrastructure.

Fitchburg/Gardner Activities

Some Franklin County residents commute to the Boston metropolitan area via the Fitchburg line. One option for traveling to Fitchburg is the current G-Link bus route operated by the FRTA and the Montachusett Area Transit Authority (MART) which provides weekday bus service between Greenfield and Athol (through FRTA), with connecting service from Orange to Gardner and the Fitchburg Intermodal Center (through MART). The FRTA portion of the G-Link is called the Route 32 bus route. However, for commuters traveling from

The MBTA conducted the *Fitchburg Commuter Rail Service Expansion Study* (February 2005). The study examined current conditions along the Fitchburg

Commuter Rail Line and made recommendations for potential service improvements. Short-range (within five years), mid-range (five to ten years) and long-range (expected to take ten years or longer) recommendations were proposed. A number of the proposed improvements will have positive impacts for the residents of Franklin County who currently ride, or who would like to ride, this commuter rail service to the Boston metropolitan area.

The short-range recommendations of the Fitchburg Rail Service Expansion Study included a number of station improvement projects and other changes aimed at reducing travel times, and increasing passenger comfort, service reliability, and the overall quality of the service to better meet ridership demands.

The recommended mid-range improvements continued these goals. Among the recommendations is the implementation of a new van/bus shuttle service from Gardner to the Fitchburg Station. One idea is to locate a Park and Ride lot between Fitchburg and Gardner and run shuttle service for the station to and from there. This service has not commenced yet, but is being planned. The mid-range recommendations also included initiating reverse commute service which would provide additional transportation opportunities to the Fitchburg area and beyond.

The long-range recommendations of the study include extending commuter rail service along the Fitchburg Rail line beyond the current Fitchburg terminus to either Gardner and/or Wachusett. In 2009, \$55.5 million in federal stimulus ARRA funding was provided for the Wachusett Commuter Rail Extension Project. This project will extend the Fitchburg Commuter rail line by 4.5 miles to a new rail station on the western border of the Town of Fitchburg near Route 2. The project also includes track improvements in Westminster to support freight and passenger rail and a new layover facility for light maintenance. It is expected that the Wachusett Station will serve an estimated 400 new commuter rail passengers beginning in 2012. The location of the station so close to Route 2 will simplify access for commuters as they drive to the

train. Groundbreaking for the station occurred on November 8, 2010.

Commuter rail service from Gardner to Boston previously operated on the Fitchburg Line in the early 1980s. In the 1980s, the service began with 60 round-trips to Boston each weekday. The service was reduced in 1983, and then discontinued entirely in 1984 due to inadequate funding. The Fitchburg Commuter Rail Service Expansion Study lists a number of constraints to the expansion of the commuter rail line from Fitchburg 16 miles west to Gardner. The major factor cited is the ownership and availability of the rail line. The rail infrastructure from Boston to Fitchburg is owned by the MBTA. From Fitchburg west, Pan Am Southern owns the infrastructure, and the MTBA would need to negotiate a trackage rights with Pan Am Southern to operate commuter rail service on this section. Another major factor is the need to upgrade the tracks. At the present time, half of the Fitchburg-Gardner section is single track, and would need to be at least double track to support commuter service and the continuing freight transport. The study estimates the capital costs of upgrading this portion of the line and commencing the commuter service at \$50 million.

The main conclusion of the Fitchburg Commuter Rail Service Expansion Study focused on the study's short-term recommendations and the need to reduce the travel times between Fitchburg and Boston. These recommendations were addressed in the Fitchburg Line Improvement Implementation Plan completed in December 2005. The Fitchburg Line Improvement Plan identified its primary goal as reducing the trip time between Fitchburg and Porter Square in Cambridge to one hour, from the current scheduled trip time of 80 minutes during the morning peak. The Improvement Plan listed many specific steps that could be implemented to help achieve that goal.

The implementation of the mid-range and long-range recommendations is slower, yet still in progress. The extension of the commuter rail line from Fitchburg west is highlighted as a long-term priority, despite its cost and challenges. The new

Wachusett Station is a small step in this implementation. The expansion of commuter rail service from Fitchburg to Gardner, and even in the shorter term, the creation of a Park and Ride lot and shuttle service for the Fitchburg Intermodal Center, hold promise for Franklin County commuters seeking transportation options for traveling to the Boston metro area.

The FRCOG, as the staff of the Franklin County Transportation Planning Organization, continues to include a task in its annual Unified Planning Work Program (UPWP) to provide support and to advocate for increased passenger rail service in Franklin County, and to participate in, and monitor the various studies and implementation projects that are planned or underway, as discussed in this chapter. In this task, the FRCOG works with other Metropolitan Planning Organizations and state agencies in Massachusetts, Connecticut, Vermont, and New Hampshire to initiate and support efforts to increase passenger rail service in Franklin County and New England.

Franklin Regional Transit Center

Construction has begun on the Franklin Regional Transit Center. The Transit Center is located in downtown Greenfield and will act as a hub for regional transit services that will provide connections to many transportation modes such as local public transit, intercity bus carriers, demand response services, local taxis, and bicycling and walking. The Transit Center's location is also directly adjacent to rail tracks on the Connecticut River Line and will offer access to future passenger rail services on the Knowledge Corridor when it returns to the region in 2012.

Work to develop a Franklin Regional Transit Center began in 2000. In 2002, an advisory group for the creation of the Regional Transit Center was established, and an initial feasibility study for the center was completed. The feasibility study, which was funded by the Executive Office of Transportation and Construction (now the MassDOT Office of Transportation Planning), identified potential sites for the transit center. In 2004, another study was conducted and a

consultant was hired to reevaluate potential sites using revised criteria. These criteria included improving access and visibility of transit in the urban renewal area, and selecting a site that could serve all modes of public transportation, including potential future rail. Under these criteria, a top location was identified and selected: the Toyota of Greenfield site on Olive Street and Bank Row in downtown Greenfield. This site is located in the Greenfield Bank Row Urban Renewal Zone and was acquired for the Transit Center in January 2009. It is expected that the construction of the Transit Center will serve as a catalyst for additional development in this area of downtown Greenfield. The site is 1.8 acres in size.

The FRTA will own and operate the center. The transit center is planned to have bike racks, indoor waiting space, ticket counters, restrooms, and other amenities and services. The center is being designed as a model "green building" with net-zero energy use and will have on-site energy generation in the form of solar panels. It will be the first Net Zero Energy transit center in the country. The building will be 24,000 square feet and will house the offices of the FRTA and the FRCOG. A passenger rail platform is also being designed for the site to accommodate passengers from the new service that is anticipated to begin in 2012.

In November 2005, the FRCOG and the FRTA were notified that a \$1.8 million Congressional funding earmark to begin development of the regional transit center had been secured. The Massachusetts legislature provided \$2 million in a bond bill in 2008 for construction of the Transit Center. In 2009, ARRA federal stimulus funding in the amount of \$12.8 million was awarded. Groundbreaking occurred in April 2009 and construction began in earnest in October 2010. The anticipated completion date is January 2012.

Recommendations for Passenger Rail

- Continue working with the Franklin Regional Transit Authority on the site design and development of the **rail platform at the Franklin Regional Transit Center** in Greenfield.
- Continue to participate in and monitor the implementation of the **Knowledge Corridor improvements** and continue to support the expansion of commuter rail service along this line.
- Continue to participate in the Pioneer Valley Planning Commission-led study exploring the potential for **rail service along the Hartford-Springfield-Boston corridor**, and support improvements which will benefit Franklin County residents and businesses as feasible.
- Continue to monitor progress on the implementation of **New Haven-Springfield Corridor improvements**, and its implications for Franklin County, and the potential for passenger rail commuter service north of Springfield, Massachusetts.
- Continue to monitor the implementation of the recommendations of the **Fitchburg Commuter Rail Service Expansion Study**, particularly the recommendations which could most affect Franklin County commuters who currently, or who would like to, use commuter rail to commute to jobs in the Boston metro area.
- Work with the Montachusett Regional Planning Commission to evaluate the feasibility and costs of extending **passenger service west from Fitchburg to Franklin County**.
- Continue to work with the other New England States to support and assist in creating the New England **high speed and intercity rail** vision.



Airports

8 Airports

There are two public-use airports located in Franklin County. They are the Turners Falls Municipal Airport in Montague, and the Orange Municipal Airport in Orange. A map showing the locations of these airports is located at the end of this chapter. These public-use airports benefit the region in several ways. Primarily, local airports are part of a national air transportation system, which provides intermodal connections and alternatives for fast, efficient transportation of people and goods. The economic benefits of local airports include supporting existing businesses and attracting new businesses by providing convenient access to and from the area. Local airports also provide public safety services, such as emergency medical air transportation. In addition, the popularity of some aviation-related recreational activities, such as parachuting, generates tourism activity that brings many visitors to the area.

According to the Federal Aviation Administration's National Plan of Integrated Airport Systems, both the Turners Falls and Orange Municipal Airports are classified as "general aviation" airports. General aviation airports provide facilities for privately owned personal and corporate aircraft, and are also used for a variety of other aviation activities, such as flight instruction, charter services, aerial agricultural spraying, aerial photography, parachuting and similar activities. Both airports are expected to remain general aviation airports in the future, and are not expected to expand into commercial airports with scheduled passenger or freight service. At the same time, neither airport is at capacity, and both airports could accommodate increased business and flight activity.

As indicated in the Orange Community Development Plan (2004) and the Montague Community Development Plan (2004), both airports are viewed as important economic resources for their towns and for the region overall. Both airports are located adjacent to industrial parks to facilitate and promote their use by local businesses. In Turners Falls, there is the 225-acre Airport Industrial

Park. In Orange, there are two industrial parks, the 57-acre Orange Industrial Park to the east of the airport and the 59-acre Randall Pond Industrial Park to the west of the airport. The Orange Community Development Plan identified five locations for potential future industrial and large commercial development in Orange; three of the five sites were near the Orange Municipal Airport. The FRCOG participated in the development of both the Orange Community Development Plan and the Montague Community Development Plan.

The Orange Municipal Airport and Turners Falls Municipal Airport have each engaged in long-term planning regarding improvements and expansions to their facilities and use, including activities to attract additional business. The Turners Falls Municipal Airport and the Orange Municipal Airport are each directed by an Airport Commission with the assistance of an Airport Manager. Airport Commission members are appointed by the Select Board.

Under the direction of the Airport Managers and Airport Commissions, the airports each implemented a community planning process to create Airport Master Plans in the late 1990s and early 2000s. An Airport Master Plan is a comprehensive study of a particular airport as it plans for its future growth and development. The community planning processes to create the Airport Master Plans involved coordination between the consultants preparing the plans, the Airport Commissions, town boards and officials, the general public, regional planning and economic development organizations, and regional, State and Federal agencies. The FRCOG participated actively in the development of the Airport Master Plans. As part of the master planning process, an Airport Layout Plan (ALP) was prepared for each airport. An ALP is a detailed drawing of current and planned airport facilities. The planning process also included the creation of a Capital Improvement Plan, which is a schedule of prioritized improvement projects with their estimated costs. An airport's Capital Improvement Plan is updated annually to reflect completed projects and to prioritize future projects.

Improvements that are specifically aviation-related may be eligible for funding by the Federal Aviation Administration's (FAA) Airport Improvement Program (AIP). The purpose of the AIP is to provide assistance to public-use airports across the country to maintain a safe, secure, and efficient national civil aviation system. The costs for AIP eligible projects are divided between the FAA, the Massachusetts Department of Transportation (MassDOT), and local communities. The federal cost share of these projects is 90%, with the MassDOT and the local airport sponsor each providing 5%. Relevant projects eligible for the FAA's AIP funding include facilities or equipment associated with the construction or reconstruction of an airport. AIP funding is not available for routine maintenance projects. The Airport Safety and Maintenance Program (ASMP) of MassDOT provides funds for projects, such as routine maintenance, that are not eligible for AIP funding. Matching funds from the local sponsor (usually the municipality) are also required for ASMP projects. All airport improvement projects, whether AIP eligible or ASMP eligible, must be listed on the statewide Capital Improvement Plan which the airports file with MassDOT.

The planned improvements at the Turners Falls and Orange Municipal Airports will increase these facilities' current utility and safety, and will address the projected future aviation needs in the region. These improvements will also promote economic development in the region by providing high quality aviation facilities to existing business users and to prospective businesses that may be seeking to locate in Franklin County. The economic benefit of the airports include the direct benefits of the activities on-site at the airport (such as airport workers' salaries), indirect benefits from off-site activities attributable to the airport (such as airport worker, pilot, and passenger spending), and a multiplier effect known as induced economic impact that results from the economic growth and activities induced by the airports' presence. For example, some of the business growth at the industrial parks near the airports could be induced by the airports' facilities and services. The airport expansions and related business growth are not

currently anticipated to generate significant levels of increased traffic on nearby roadways. However, the FRCOG will continue to monitor the impact of the airport projects on area traffic and area roadways, and to recommend improvements, if necessary, at a future date.

Orange Municipal Airport

Existing Conditions

The Orange Municipal Airport is the largest airport in the Franklin County region. Located in the Town of Orange on the eastern edge of Franklin County, the airport is surrounded by two industrial parks, one on each side, and by forest land. The airport property abuts Route 2 and its entrance is approximately two miles from this highway. As mentioned previously, the Orange Municipal Airport is classified as a general aviation airport, which provides facilities for personal and corporate aircraft, and offers a variety of aviation and aviation-related activities.

The airport was built in 1929 as the Orange-Athol Airport. During World War II, the airport was significantly upgraded for potential military use. The airport's triangular runway configuration is a remnant of this update. Currently, the airport has two active runways. The third previous runway is now a taxiway. The airport's two primary runways are Runway 14-32, and the crosswind runway, Runway 01-19. Runway 01-019 measures 5,000 feet long and runway 14-32 measures 4,800 feet long. Both runways are 75 feet wide and hard surfaced. The runways' lengths enable the airport to accommodate a wider variety of aircraft than smaller airports in the greater region, such as in Turners Falls, Gardner, and Fitchburg. In addition, the airport has fueling capability on-site, which can be an important feature for pilots choosing where to land.

Current airport tenants include aviation clubs, individuals, and six businesses that offer flight instruction and guided tours, air craft maintenance, recreational parachuting activity, an advanced auto driver training school, a motorcycle training school and a graphic arts/marketing firm. Several local businesses also use the airport on a regular basis.

The average drive time for these passengers after arriving at the airport is about 45 minutes.



Aerial view of the Orange Municipal Airport (Pictometry)

The Orange Municipal Airport was recently awarded \$500,000 of federal American Recovery and Reinvestment Act (ARRA) funds to improve the condition of the pavement on the runways. The runways at the Orange Airport can accommodate virtually all types of general aviation including jet traffic operations. An “operation” is defined as a landing, takeoff, or touch-and-go procedure by an aircraft at an airport. The estimated number of annual operations at the Orange Municipal Airport for 2009 was 25,000. This is a sharp decrease from 36,000 in 2006. According to the Airport Manager, airports are a good barometer of the economy, the decrease in operations is directly related to the national financial crisis of 2008. Airports across the state have reported a decrease in operations of up to 50 percent.

As of 2009, the mix of aircraft using the Orange Municipal Airport consists predominantly of single-engine airplanes (75% of the annual operations), with some small multi-engine corporate airplanes (15%), typically used for skydiving and charter activities, and large corporate aircraft (10%) such as small jets including Gates Lear Jets and Cessna Citations. Corporate aircraft use of the airport has increased by 2 percent since 2006. The number of aircraft based at the airport as of 2009 is 60, which is the same as 2006 but an increase of 11 percent since 1999, when the number stood at 54.

The airport’s expanding capacity for aircraft on the ground, including more parking, more hangars,

more tie-down space, and the presence of a full-service fixed-based operator to service aircraft will allow it to accommodate growth as the economy recovers. The airport has 29 hangars; this is a 9 percent increase from 2006. More hangars are planned. However, the increased price to bring power to the hangars went from a few thousand dollars to approximately \$30,000. Unfortunately, this fact has deterred a lot of potential business development.

Current and Future Activities

The Orange Airport has succeeded in acquiring the easements for the approaches and the removal of off-property obstructions related to future phases of airport property development. The airport has also installed new security fencing and gates. The runway pavement will be repaired with the \$500,000 ARRA grant. Top priority projects for the next 5 years, as identified in the airport’s Capital Improvement Plan, are listed in Table 8-1.

These priorities include the rehabilitation of the existing taxiways, the construction of terminal apron (paved area near the airport hangars and buildings), the purchase of snow removal equipment, and a building to house the equipment.

Projects that are currently not in the Orange Municipal Airport’s Capital Improvement Plan, but that have been identified for future implementation are the establishment of a large corporate aircraft hangar, a smaller aircraft T-hangar (with about eight bays), and a new Terminal Building. The hangars and building will all be municipally-owned. The airport is currently seeking alternative funding sources for these projects, and therefore has not incorporated them into the CIP at this time.

Table 8-1: Orange Municipal Airport Capital Improvement Plan Projects

Project (with expected federal fiscal year of the start of construction)	Projected Total Cost	Federal Funding (90% of cost)	State Funding (5% of cost)	Local Funding (5% of cost)
Acquire Snow Removal Equipment (2 trucks with plow attachments) (FFY10)	\$230,000	\$207,000	\$11,500	\$11,500
Reconstruct Taxiway A & Existing GA Ramp – Phase I (FFY11)	\$1,520,000	\$1,368,000	\$76,000	\$76,000
Reconstruct Taxiway B (TWB) & Existing General Aviation Ramp – Phase II Design Phase (FFY12)	\$1,142,000	\$1,027,800	\$57,100	\$57,100
Reconstruct Taxiway D (FFY13)	\$968,000	\$871,200	\$48,400	\$48,400
Construct New Taxi lane /Apron (Parallel to TWB) Phase I (FFY14)	\$750,000	\$675,000	\$37,500	\$37,500
Purchase Additional Snow Removal Equipment (front end loader and large snowblower)	\$600,000	\$540,000	\$30,000	\$30,000
Construct Snow Removal Equipment Building (FFY15)	\$750,000	\$675,000	\$37,500	\$37,500

Note: FFY = Federal Fiscal Year (October 1st through September 30th)

Source: Orange Municipal Airport, September 2009.

The Orange Municipal Airport property contains a diverse and unique mixture of grassland, farmland, and forest areas, which provide important habitats for a wide diversity of plant and animal species including a number of rare grassland birds. The airport is well known as an important birding site in the region. The Town of Orange recognizes the wildlife value of the airport property, and has worked with the State's Natural Heritage and Endangered Species Program, run through the Department of Fish and Game's Division of Fisheries and Wildlife, to ensure that the airport's improvement and expansion projects do not negatively impact important animal habitats located on site.

The Orange Municipal Airport property also contains a portion of an aquifer Zone II recharge area. The aquifer recharge area is strictly regulated in terms of drainage, stormwater discharge, and allowed developed land uses. Airport and town officials cooperatively recognize the sensitive environmental nature of this area, and as a result,

the plans for future airport expansions and construction projects leave this area undisturbed.

In 2004, the Orange Municipal Airport became financially self-sufficient, and now no longer relies on Town subsidies for its operation. This self-sufficiency was achieved years earlier than initially projected, and reflected the numerous projects to update and expand the airport's

infrastructure, and the resulting growth in use and demand for the airport's facilities and services.

Some of this increased use also comes from individuals and businesses that had previously relied on airport facilities in other metropolitan areas nearby. With Orange located along the Route 2 corridor and within an easy drive of the Boston metro area, the Orange Municipal Airport has been able to attract a number of tenants and other airport users from eastern Massachusetts. The Orange Municipal Airport competes for potential users from Eastern Massachusetts with the general aviation airports located east along Route 2 in Gardner and Fitchburg. However, the Orange Airport is the only public-use airport along the Route 2 corridor to have a 5,000-foot runway, a feature which continues to attract users and which allows it to serve a more diverse mixture of aircraft than other airports nearby.

Turners Falls Municipal Airport

Existing Conditions

The Turners Falls Municipal Airport is located in the Town of Montague and is bordered by an industrial park, the regional vocational high school, and forest land. Interstate 91 and Route 2 are both within a close distance to the airport. The Turners Falls Municipal Airport is also a general aviation airport. The Turners Falls airport has one runway (Runway 16-34) and a parallel taxiway. The paved runway is 3,213 feet long and 75 feet in width, and can accommodate small single engine and multi-engine piston aircraft, and small jets such as the Cessna Citation. The runway approaches are visual. The Turners Falls Municipal Airport has a fixed base operator on-site that provides various services including maintenance, flight instruction and fuel.



**Aerial view of the Turners Falls Municipal Airport
(Pictometry)**

Most of the current users of the Turners Falls airport are recreational flyers. Students and families of students from the many private boarding schools in the region use the airport to travel between school and home. There are also some business-oriented travelers. For example, a local manufacturer has been known to use the airport for transporting personnel back and forth between the local plant and the corporate headquarters in a nearby state. Pioneer Aviation is located adjacent to the Airport property and runs a flight school and offers services for pilots.

The Turners Falls Municipal Airport completed an Airport Master Plan in 1990, and updated the plan in 1999. The 1999 Airport Master Plan Update

examined the current and projected levels of use of the airport, and concluded with recommendations to extend the existing runway and upgrade various facilities. As a follow-up to the Master Plan Update, a Runway & Terminal Area Study and Airport Layout Plan Update were created by Gale Associates, Inc. for the Montague Airport Commission in 2002.

The FAA defines an operation as a landing, takeoff or touch-and-go procedure by an aircraft at an airport. As of 2009, annual operations at the Turners Falls Municipal Airport stand at approximately 18,000, a 44 percent increase since 1998. The airport's Master Plan Update (1999) forecasted that the number of annual operations would grow to 18,000 in 2009, and to 23,625 in 2019.

As of 2009, the mix of aircraft using the Turners Falls Airport is predominantly single-engine aircraft (96%) with some multi-engine aircraft (4%). However, with planned improvements to increase the runway length and install navigational aids, the aircraft mix is expected to show a moderate decrease in the percentage of single-engine aircraft, and a moderate increase in the percentage of multi-engine, turbo and potentially jet aircraft. At the same time, however, it is unlikely that the airport will attract and maintain bulk airfreight services in the foreseeable future due to its proximity to larger airports such as Barnes Municipal Airport in Westfield, Westover Metropolitan Airport in Chicopee, and the Orange Municipal Airport in Orange.

Airport operations are currently split 67 percent local and 33 percent transient; this ratio is expected to continue. Local operations are those that take place within 20 miles of the airport or are within the local traffic pattern. Transient operations are those that originate or terminate at another airport or outside of the local traffic pattern. The predicted mix of local and itinerant operations is an important factor in determining how much short-term parking and long-term storage of based aircraft will be needed at the airport in the future.

As of August 2008, there were 31 aircraft based at the airport, a slight decrease since 2007. One issue in increasing the number of aircraft based at the airport has been the limited amount of hangar space. The airport currently has 10 privately-owned hangars which hold a total of up to 25 aircraft. According to the Turners Falls Airport Manager, in the last few years, the municipal airports in Fitchburg, Orange, and Northampton have both expanded their hangar spaces, and as they have done so, some aircraft previously based at the Turners Falls Airport have relocated to these other airports. To address this issue, the Turners Falls Airport is hoping to begin adding up to 26 new hangars as soon as a funding source becomes available.

Current and Future Activities

The current capital improvement activities at the Turners Falls Municipal Airport focus on implementing the recommendations of the 1999 Airport Master Plan Update and the Runway & Terminal Area Study and Airport Layout Plan Update. These recommendations addressed facility improvements, including extending the length of the runway. The Airport Layout Plan (ALP) presents detailed plans for the proposed expanded runway and associated facilities. The ALP was created through a community planning process guided by a Technical Advisory Committee consisting of residents, local officials, regional officials, and State agencies appointed by the Montague Airport Commission. The FRCOG participated in this planning process. The ALP update is an important document that allows relevant projects to be eligible for FAA funding through its Airport Improvement Project (AIP). The ALP has been approved by both the FAA and the Massachusetts Department of Transportation (MassDOT).

Recent improvements at the airport based on the recommendations of the Master Plan Update and Airport Layout Plan include the development of an airport administration building and the construction of a new security fence along Millers Falls Road. Current activities focus on the proposed rehabilitation and reconstruction of the airport's runway. The first phase of the reconstruction

extended the runway from its current length of 3,013 feet by 200 feet on the west end. Also part of the first phase, includes installing navigational lighting and a rotating beacon. The installation of the navigational lighting and rotating beacon are still in progress. The second phase will hopefully expand the runway by an additional 1,000 feet to the east side of the runway in the next five years. The second phase is contingent on getting more funding and designing the expansion so it avoids environmentally sensitive areas, the area of sacred Native American stones, and other areas that need to be protected. The consultants who created the 1999 Master Plan recommended expanding the runway length and width to accommodate all aircraft in the category of B-II general aviation aircraft (30,000 pounds in weight or less) with less than ten passenger seats. Presently the Turners Falls Municipal Airport can only accommodate B-I general aviation aircraft (weighing 12,500 pounds or less). There are multiple environmental conditions and aircraft characteristics that determine appropriate runway length requirements for any given aircraft. The proposed runway reconstruction addresses these factors.

During the permitting process for the airport's current runway reconstruction and expansion project, areas of environmental sensitivity and archeological concern on the airport property were identified. Meetings were held with representatives of the Narragansett tribe and friends of Wissatinnewag regarding Native American relics on site. The National Register declared a set of stones on the airport property to be a "sacred ceremonial hill" in December 2008. Discussions were also conducted with State environmental officials on how to protect the grasshopper sparrow and frosted elfin butterfly habitats that were found. The proposed reconstruction and expansion of the runway takes these environmental and archeological factors into consideration so that the project avoids impacting these areas.

Additional recommended improvements in the Turners Falls Airport Layout Plan include work on the runway's associated taxi lanes and taxiways, upgrades to the runway approach, improvements to

the apron, as well as perimeter fencing and other security recommendations. Many of the improvements recommended in the ALP have been implemented while others have been found not to be needed. Recommendations completed in recent years include the acquisition of private property in the Runway 34 approach and improvements to the apron. Future planned projects are outlined in the airport's Capital Improvement Plan. These projects include the installation of an obstruction light on the summit of Country Hill in the Montague State Forest.

Airport Security

Since September 11, 2001, greater attention has focused on security at the nation's major airports. In Massachusetts, attention on airport security has included the state's small airports as well.

MassDOT oversees and regulates the 42 public-use airports in Massachusetts, excluding Logan and Hanscom Airports. There are two public-use airports located in Franklin County – the Turners Falls Municipal Airport in Montague and the Orange Municipal Airport in Orange. Since 2001, MassDOT has established a number of policies and programs to increase airport security. MassDOT has funded security enhancements at municipal airports including security fencing, access control systems, and video monitoring. MassDOT has also implemented a statewide badge program for aircraft users and airport tenants, and all badges have been entered into centralized state database. Additionally, MassDOT now requires that each public-use airport develop and implement an airport security plan, and that the plan be consistent with MassDOT security guidelines and regulations.

Both the Orange Municipal Airport and the Turners Falls Municipal Airport have created airport security plans for their facilities. They have both implemented the use of badges for aircraft users, and have made security improvements onsite, including new perimeter fencing and gates at vehicle access points. The Orange Municipal Airport manager also indicated to the FRCOG that other security measures taken at the Orange Airport include the following:

- lighting has been improved in high security areas;
- the airport staff meets regularly with local law enforcement officials to discuss airport security issues, and
- the local police have increased the number of their patrols to the airport during the day and evening.

Recommendations for Airports

- **Complete short-term projects** (within 0-3 years) which are included **in the Orange Municipal Airport's Capital Improvement Plan (CIP)**, such as the rehabilitation of the terminal apron area, the building of new hangars, and construction of a new taxiway.
- **Implement mid-term projects** (within 4-6 years) which are included **in the Orange Municipal Airport's CIP**, such as the construction of a new snow removal equipment building and the rehabilitation of Runway 14-32.
- Continue pursuing **long-term (beyond 6 years) improvements** at the Orange Municipal Airport.
- Pursue the **funding for, and implementation of, other projects that have been identified for future implementation**, such as the establishment of a large corporate aircraft hangar, a small aircraft T-hangar, and a new Terminal Building.
- Complete **short-term projects in the Turners Falls Municipal Airport's CIP**, such as reconstruction and extension of Runway 16-34, reconstruction of a parallel taxi-way, and extension of the itinerant apron area, and land acquisitions.
- Implement **mid-term projects** (within 4-6 years) which are included **in the Turners Falls Municipal Airport's CIP**, such as the purchase of new ground maintenance equipment, the installation of an automated weather observing system, and the replacement and relocation of the airport's locating beacon.
- Continue pursuing **long-term improvement projects at the Turners**

Falls Municipal Airport, such as the construction of up to 26 new airport hangars.

- Revise and update the **Master Plans and Capital Improvement Plans for the Turners Falls and Orange Municipal Airports** as necessary to reflect changing airport conditions, updated funding and cost figures, and revised project timetables.
- Continue considering the **impacts of planned and proposed improvement and construction projects at the airports**, on important archeological and environment resources, and continue to involve State environmental agencies, and other appropriate officials in the planning processes for the airport projects.
- Follow **environmental best management practices** at the airports for vegetation control, stormwater management, the use of deicing compounds, and the management of chemical storage and waste disposal.
- Continue promoting the **expansion of activities and facilities at the Turners Falls Municipal Airport and Orange Municipal Airport**, within the framework of the airports' plans, that will help promote and sustain the airports' financial self-sufficiency, and that will serve regional business interests and support economic development in the region.
- Continue **monitoring security at the Orange Municipal Airport and the Turners Falls Municipal Airport**, and implement additional security measures as necessary.



Transit and Paratransit

9 Transit and Paratransit Services

Franklin County is the most rural region in Massachusetts with a population density of only 100 people per square mile. The region's rural nature results in a dispersed distribution of homes, jobs, and services; which makes it difficult to effectively meet residents' transportation needs through transit routes. The consequence is a limited public transit network and a region that is heavily dependent upon the personal automobile. This can be challenging for the estimated 8 percent of households in Franklin County that do not have access to a vehicle (U.S. Census, 2000).

Despite the vast geographic area of the county and its rural character, there is an ever growing demand for increased public transit options. Surveys conducted during the development of this Regional Transportation Plan (RTP), as well as surveys conducted for other transit-related projects in the county, demonstrate a need for increased and improved transit services in the region. In fact, the most common recommendation received from the RTP survey and outreach called for expanded bus service.

The parts of the region with the best transit access and more service are typically located in the urban clusters (i.e. larger town centers) and downtown areas that have the highest population densities, such as: Greenfield, Turners Falls, Sunderland, Deerfield, and Orange. Sparsely populated areas have less transit access due to the higher cost of providing services to a more dispersed population with limited funds. A lack of secure long-term funding is a critical challenge to providing public transit in Franklin County. A number of the most popular bus routes in the region have no secure long-term funding.

The role of the FRCOG in the context of regional public transit access is to work with the regional transit agencies and MassDOT to help with the

following tasks: 1) provide the best transit services possible; 2) expand existing services to meet resident and worker needs as feasible; and 3) ensure that transit planning and programming activities in Franklin County are consistent with the principles of MassDOT's transportation vision, as clarified in its *YouMove* planning initiative.

The ten core themes that have emerged from the MassDOT *YouMove* civic engagement process emphasize the need to provide increased mobility and support a fair and accessible transportation system that considers and addresses the needs of all populations, including people with disabilities, the elderly, children, and people who are economically and historically disadvantaged. Each of these guiding principles specifically addresses transit in the Commonwealth in some way and those guiding principles were incorporated into the development of this Regional Transportation Plan.

In a recent survey, the majority of respondents (37%) felt that the condition of public transit in recent years had stayed the same, while 23% felt that it had worsened. Approximately 12% of the respondents had seen an improvement, with the remaining 28% unsure.

The Franklin Regional Transit Authority (FRTA) provides public transit services to Franklin County with some supplemental services provided by the Pioneer Valley Transit Authority (PVRTA). A total of eight fixed bus routes currently operate within Franklin County. The FRTA serves 40 towns in Franklin, Hampshire, Hampden, and Worcester counties. All the towns in Franklin County except for Monroe, Sunderland, and Leverett are members of the FRTA. Sunderland and Leverett are members of the PVRTA. Additionally, both the FRTA and PVRTA provide paratransit service to their respective towns with the level of the service varying significantly by community. Several additional transit and transportation services are also offered in the region. One service is provided by the Community Transit Services (CTS) in the Athol-Orange area. CTS started in 1999 as a demonstration project to

provide work-related transportation and transportation to G-Link bus stops so access to the Fixed Routes could be made. Since its first year, CTS ridership has more than doubled. A map of the service areas for both the FRTA and the PVRTA is contained at the end of this chapter.

Fixed Route Transit Services

Fixed route transit service in Franklin County is provided by the FRTA and the PVRTA. While the FRTA operates most of the routes (the FRTA currently operates six fixed service routes) in Franklin County, the PVRTA operates two fixed service routes which travel through the Franklin County communities of Sunderland and Deerfield. Transit routes operated by the FRTA are limited to weekdays and non-holidays, while the two routes operated by the PVRTA operate also on the weekends. The PVRTA does not operate on major holidays, but does run on reduced schedules for minor holidays.

Franklin Regional Transit Authority (FRTA)

The FRTA is the primary transit agency for Franklin County. The FRTA's service territory extends into Hampshire, Hampden, and Worcester Counties. The FRTA serves the most rural and geographically expansive area of all the Regional Transit Authorities in Massachusetts. The service area includes twenty-three towns in Franklin County and extends south to Blandford, Russell, and Southwick in Hampden County, west to Middlefield in Hampshire County, and east to Athol, Phillipston, and Petersham in Worcester County. The FRTA was established in 1978 with the provisions of Chapter 161B.

The FRTA is funded from a combination of federal, state, and local funding sources as well as from revenue generated from fares. Each of the towns that are serviced by the FRTA pay an assessed amount based on: the level of costs associated with Demand Response transportation, a percentage of Fixed Route

costs based on population of the town, and historical data.

The FRTA presently has 42 transit vehicles in total, which includes 9 buses, 13 minibuses, and 20 vans, all of which are wheelchair accessible. All of the buses used for fixed route service have bicycle racks on the front of the buses. The bicycle racks hold two to three bicycles each and are on the buses year-round. Between July 2009 and June 2010 (Fiscal Year 2010), the FRTA fixed routes transported a total of 116,553 passengers, an average of 9,712 riders per month. This is an 8 percent decrease from Fiscal Year 2008.

Table 9-1 outlines current FRTA bus route schedules, frequency, and fare schedule. Bus fares for FRTA fixed route service currently ranges from \$1.00 (Routes 21 and 22), \$1.50 (Routes 31, 32, and 41) to \$3.00 (Route 23). Passengers with valid Statewide Access Passes, ADA cards, Medicare cards, and persons over 60 years old ride for half (1/2) of the listed fare. Passengers with a valid MA Commission for Blind card, FRTA Veteran's photo ID card, or a valid Department of Veteran's Affairs photo ID card ride for free. Children under the age of 5 ride free when accompanied by a fare-paying adult. In June of 2010, the FRTA installed electronic fareboxes on all fixed route transit buses. These fareboxes are intended to make riding the bus easier and more convenient by allowing riders to purchase a magnetic fare ticket that can be used for multiple rides. Additionally, the electronic fareboxes also accept cash.

In January 2008, the FRCOG released the study, *Transit Services and Needs in Western Franklin County*. This study examined current transit service

Table 9-1: FRTA Routes and Route Frequency

Route	Primary Destination(s) from Downtown Greenfield	Number of Round-Trips on Weekdays	Fare (One-way)
21	Greenfield	9	\$1.00
22	Montague	8	\$1.00
23	Amherst	2	\$3.00
31	Northampton	6	\$1.50
32	Athol	7	\$1.50
41	Charlemont	4	\$1.50

Note: FRTA Routes effective as of September 21, 2009.

in the western region of the county and recommended ways to expand services. Through surveys, FRCOG staff found that there was considerable interest by residents to having more frequent and longer service for transit along Route 2 west from Greenfield to Charlemont. In early 2009, the FRTA conducted an analysis of all of their fixed route services. This review was the first time an in-depth comprehensive analysis had been conducted since the FRTA consolidated with the GMTA (Greenfield Montague Transportation Area) in 2006. The results of both of these studies led to a number of changes to almost all of FRTA's fixed route services in September 2009.

On September 21, 2009, the FRTA changed its transit routes and schedules as a result of the system review performed in 2009. The revised routes are described in detail in the section below and are summarized in Table 9-1. Ridership data for these routes is only available since the September 2009 change and this information is contained in Table 9-2. Table 9-3 shows the annual ridership rates for the former FRTA routes, prior to the change, for the fiscal years (FY) 2007 to 2009. These statistics show that ridership grew between 2007 and 2009.

FRTA Fixed Route Descriptions

Route 21: Greenfield Community

Route

Route 21 (Greenfield Community Route) traverses around Greenfield, reaching the majority of Greenfield's primary shopping destinations and

Table 9-2: Ridership Statistics for the Revised, Current Routes, FY 2010

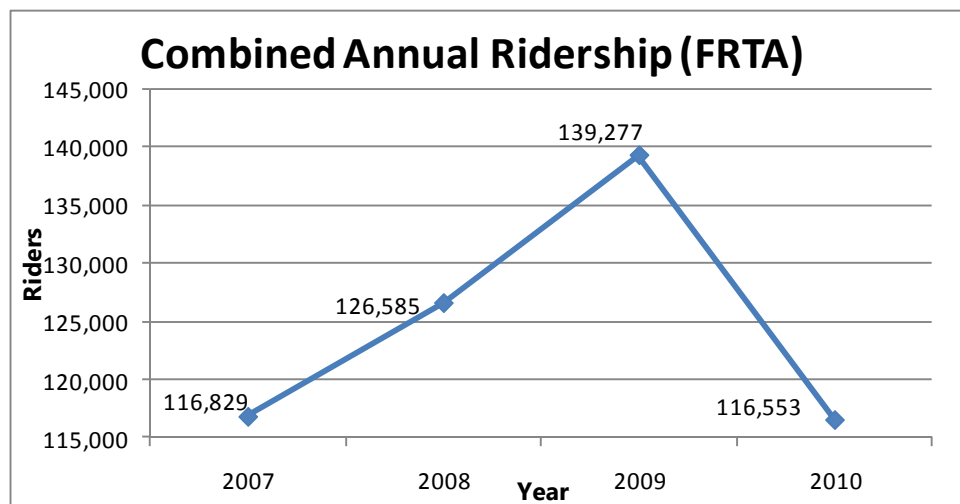
Route	Annual Ridership FY 2010
Route 21 (Greenfield)	25,687
Route 22 (Montague)	24,548
Route 23 (Amherst)	4,733
Route 31 (Northampton)	20,674
Route 32 (Athol)	32,857
Route 41 (Charlemont)	6,014

Table 9-3: FRTA Ridership Statistics, FY 2007 to FY 2009

Route	Annual Ridership FY 2007	Annual Ridership FY 2008	Annual Ridership FY 2009	Percent Change from FY 2007 to FY 2009
West	4,989	5,600	5,887	+ 18.0%
North	1,102	568	360	- 67.3%
Valley	16,389	19,359	21,459	+ 30.9%
G-Link	31,930	31,954	37,688	+ 18.0%
Greenfield Division	62,419	69,104	73,883	+18.4%
Total	116,829	126,585	139,277	+ 19.2%

Source: Franklin Regional Transit Authority.

Figure 9-1: Combined Annual Ridership



Source: Franklin Regional Transit Authority

residential areas. The westbound route starts at Court Square in downtown Greenfield and travels to major destinations in downtown Greenfield, including: the Franklin Medical Center, Cherry Rum

Plaza, Greenfield High School, Leyden Woods, Greenfield Community College (GCC), the Big Y/Home Depot shopping centers, and the Greenfield Corporate Center. The one-way fare for this route is \$1.00 and the entire route takes approximately one hour and fifteen minutes roundtrip.

The schedule for this route currently consists of four westbound runs per day with the earliest run leaving Court Square at 8:00 A.M. and the latest leaving at 4:45 P.M. In the eastbound direction, this route currently consists of five runs per day with the earliest one leaving Court Square at 6:15 A.M. and the latest leaving at 6:00 P.M.

While Route 21 (Greenfield Community Route) is a relatively new route, it has many similarities to the route which preceded it – the Federal/Conway Route. The major differences between the two routes are the additional stops included in the revised Route 21 to Stop & Shop, GCC, Big Y and Home Depot Plaza, as well as the Greenfield Corporate Center. Previously, the stops at GCC, Big Y and Home Depot Plaza were included on the Greenfield Community College Route. Route 21 is a consolidation of the former Federal/Conway Route and the GCC Route, providing more destinations on the new route.

Route 22: Montague/Greenfield Route

Route 22 (Montague/Greenfield Route) provides service between the communities of Greenfield and Turners Falls, with limited service also provided to Montague Center and Millers Falls. Route 22 begins at Court Square in Greenfield and travels to major stops that include Farren Care Center, Turners Falls High School, and Turners Falls Industrial Park.

The schedule for this route currently consists of eight runs per day with the earliest run leaving Court Square at 6:15 A.M. and the latest leaving at 6:30 P.M. Of these eight runs, three provide additional service to Millers Falls and Montague Center.

Route 22 (Montague/Greenfield) closely resembles the former Turners Falls Route. The major differences between the two routes is the shifting of certain stops (Stop & Shop, Franklin Medical Center) off of the former Turners Falls Route and onto the previously discussed Route 21 (Greenfield Community Route), thus resulting in a shorter and more direct Route 22.

Route 23: Amherst/ Greenfield Route

Route 23 (Amherst/Greenfield Route) connects Greenfield to the University of Massachusetts Amherst campus, via Turners Falls, Millers Falls, and Montague Center. The schedule for this route currently consists of two round-trip runs per day with the earliest run leaving Court Square at 6:45 A.M. and the latest leaving at 3:05 P.M.

Prior to the major route changes implemented in September 2009, transit riders wishing to access the UMass campus had to utilize the Valley Route which would take them as far as Sunderland, where they would have to transfer to a PVT/UMass Transit bus to access the campus. This revised route, Route 23, provides a direct connection between the communities of Greenfield, Turners Falls, Millers Falls, and Montague Center to the UMass campus.

Route 31: Northampton/Greenfield Route

Route 31 (Northampton/Greenfield Route) connects the communities of Greenfield, Deerfield, Whately, and Northampton. Starting at Court Square in Greenfield, Route 31 travels to Deerfield where its stops include Hardigg Industries, Frontier High School, South Deerfield Center, and Deerfield Industrial Park, with additional stops at the Yankee Candle Store for all runs starting with the 9:15 A.M. run. After stopping in Deerfield, Route 31 proceeds on to Whately and continues on to Northampton, stopping at the Big Y/Wal-Mart Plaza and the Academy of Music. The one-way fare for this route is \$1.50 and the entire route takes approximately an hour and a half roundtrip.

The schedule for this route currently consists of six round-trip runs per day with the earliest run leaving Court Square at 5:15 A.M. and the latest leaving at 5:15 P.M. Route 31 very closely resembles the

former Valley Route with the only noticeable difference being the removal of the UMass connector in Sunderland from the route.

Route 32: Athol/Greenfield Route

Route 32 (Athol/Greenfield Route) serves to connect several communities along Route 2 east, from Greenfield to Athol. Route 32 also connects major destinations for users, including: the Franklin Medical Center, Stop & Shop, the Orange Health Center, Wal-Mart, the YMCA in Athol, and the Athol Memorial Hospital. The one-way fare for this route is \$1.50 and the entire route takes approximately two hours roundtrip. The schedule for this route currently consists of seven round-trip runs per day with the earliest run leaving Court Square at 5:00 A.M. and the latest leaving at 5:15 P.M. This route was by far the most popular route in FY 2010 with 32,857 riders.

Route 32 (Athol/Greenfield) is the same route as the former G-Link Route with some very subtle changes to departure and arrival times. The G-Link Route started in October in 1999 and was the result of a joint collaboration between the FRTA, FRCOG, and the Montachusett Regional Transit Authority (MART) to improve access to jobs. The entire G-Link service operates between Greenfield and Gardner, with connections to Fitchburg and to the commuter rail line running between Fitchburg and Boston. The FRTA runs the western portion of the service, now called Route 32, and MART runs the eastern portion of the service and the connecting bus service to Fitchburg.

Route 41: Charlemont/Greenfield Route

Route 41 (Charlemont/Greenfield Route) primarily serves West Franklin County, connecting the communities of Greenfield to Shelburne, Buckland, and Charlemont. Route 41 starts at Court Square in Greenfield and travels along Route 2 towards Shelburne Falls. After Shelburne Falls, Route 41 either travels to Mohawk High School (the first route of the day) or to the Buckland Park and Ride lot (the remaining routes). The remaining two stops include the Academy at Charlemont and Charlemont Center. The one-way fare for this route

is \$1.50 and the entire route takes approximately two hours roundtrip.

Route 41 (Charlemont/Greenfield) is the same route as the former Campus West Route with some very subtle changes to departure and arrival times and number of daily runs.

Historically, this route only operated between September and June, when the Academy at Charlemont was in session and route frequency varied within that time frame. However, the FRTA recently secured JARC funding to extend this route to become year-round with additional number of runs per day to make the route more usable for commuters. This route operates four runs Monday through Fridays. The earliest run departs Court Square at 6:55 A.M. with the latest run departing from Court Square at 4:15 P.M. (Monday through Friday).

The Pioneer Valley Transit Authority (PVTA)

The Pioneer Valley Transit Authority (PVTA) is based in Springfield, Massachusetts and is the regional transit authority for the Pioneer Valley. The PVTA was created in 1974 with the purpose of rebuilding and expanding the region's transit fleet and services. The PVTA is the largest regional transit authority in Massachusetts with a fleet of 174 buses



PVTA bus at UMass

and 144 vans. The PVTA has 24 member towns in Hampshire, Hampden, and Franklin Counties, including Leverett and Sunderland and provides fixed-service bus routes as well as demand-response services for the elderly and disabled.

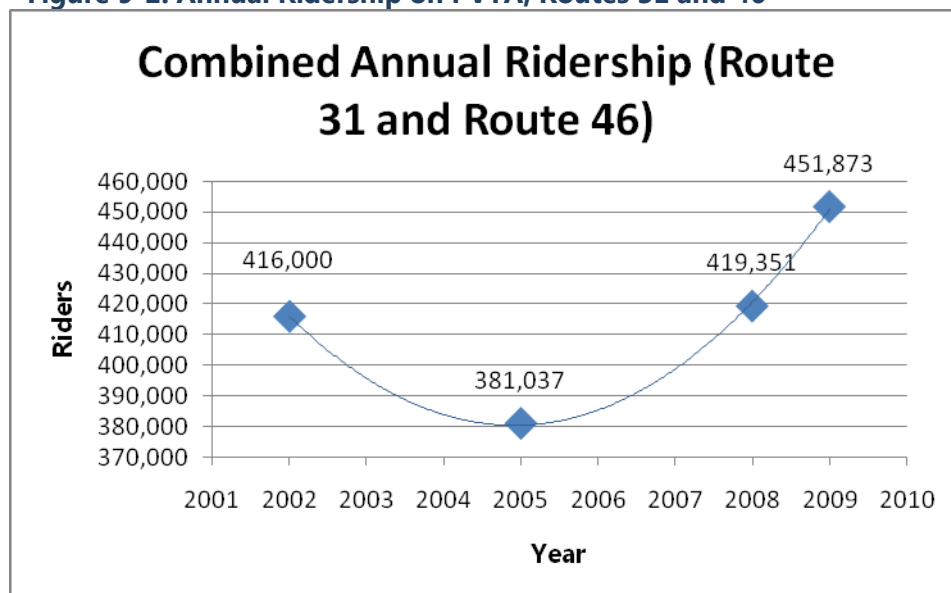
The PVTA operates two main transit routes in Franklin County: Route 31(Sunderland/South

Amherst) and Route 46 (South Deerfield/UMass). Route 31 (Sunderland/South Amherst) connects the UMass campus to Sunderland Center with multiple stops en route. Route 46 (South Deerfield/UMass) links the UMass campus to South Deerfield Center as well as several stops along the way. The fare for both of these routes is \$1.25 for a one-way ticket, although students, faculty and staff of the Five Colleges ride for free. The routes operate 7 days a week except on holidays, with a slightly modified schedule on the weekends. In general, ridership along these routes has increased in the last 5 years, as shown in the graphic below, Figure 9-2. The combined annual ridership for these routes was approximately 416,000 riders in 2002, which decreased to 381,037 riders in 2005.

Since this decline in 2005, annual ridership has grown significantly. In fact, ridership has increased nearly 20 percent from FY 2005 to FY 2009. This increase may be attributed to a large number of factors which may include rising gas prices, economic downturn, and increased University enrollment.

In the most recent past, annual ridership for Route 31 for the fiscal year (FY) 2009 was approximately 431,756 riders, equivalent to nearly 36,000 riders per month on average. Annual ridership for Route 46 for FY 2009 was approximately 20,117 riders, an average of 1,676 riders per month. Ridership data is contained in Table 9-3. As shown in Figure 9-3, which displays ridership trends for Route 31 over the course of the fiscal year, ridership is greatly dependent upon the academic schedule. Ridership along these routes decreases significantly when UMass is not in session.

Figure 9-2: Annual Ridership on PVRTA, Routes 31 and 46



Source: Pioneer Valley Transit Authority

PVRTA Fixed Route Descriptions

The following section is a detailed description of the PVRTA routes that run within Franklin County.

Route 31: Sunderland/South Amherst

Route 31 provides transit services between the communities of South Amherst and Sunderland. Route 31 operates from 7:00 a.m. until at least midnight every night, with service extending to 1:00 a.m. on Thursdays, Fridays and Sundays, and to 2:00 a.m. on Saturdays. During the regular UMass academic year, Route 31 provides 59 runs to Sunderland Center each weekday, as well as 21 runs on Saturdays and 14 runs on Sundays, for a total of 330 runs each week. When UMass is not in session, the number of weekday runs to Sunderland Center drops from 59 per day to 26 per day. Route 31 is traditionally the PVRTA route with the highest ridership.

Table 9-3: Ridership Statistics for PVRTA Routes to Franklin County, FY 2008 to FY 2009

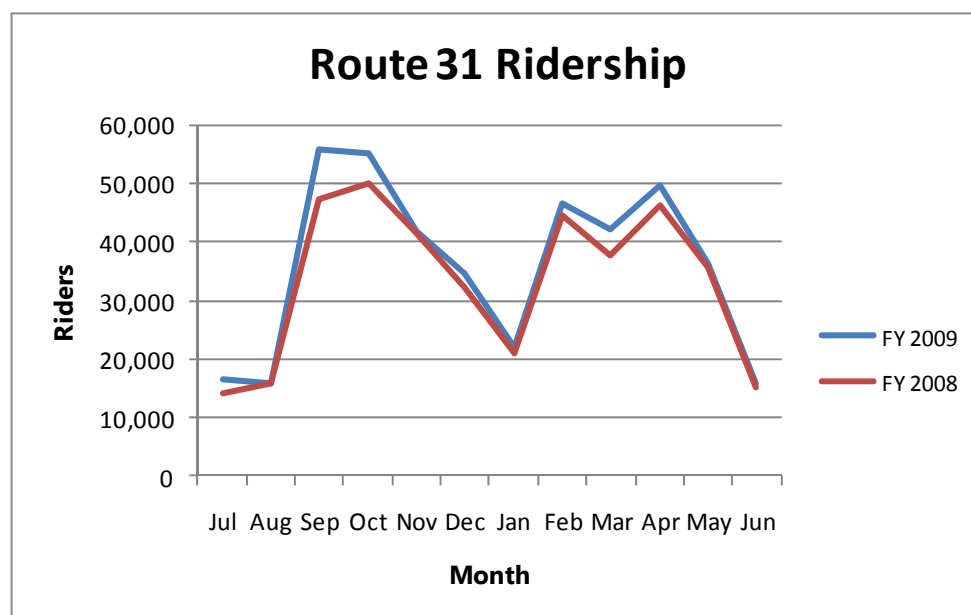
Routes	Annual Ridership FY 2008	Annual Ridership FY 2009	% Change in Ridership, FY 2008 to 2009
Route 31 (Sunderland/ South Amherst)	400,941	431,756	+ 7.7%
Route 46 (South Deerfield/ UMass)	18,410	20,117	+ 9.3%
Total	419,351	451,873	+7.8 %

Table 9-4: PVRTA Routes to Franklin County, and Route Frequency

Route	Schedule	Number of Round-Trips on Weekdays	Number of Round-Trips on Saturday	Number of Round-Trips on Sunday	Total Trips per Week
Route 31 (Sunderland/South Amherst)	Regular	59	21	14	330
	Reduced	26	16	11	157
Route 46 (South Deerfield/UMass)	Regular	6	5	3	38
	Reduced	6	4	2	36

Note: Reduced schedule in effect when UMass is not in session.

Figure 9-3: Route 31 Ridership on a Monthly Basis



Source: Pioneer Valley Transit Authority

In 2009, Route 31 carried approximately 55,666 riders during its peak month, September. The lowest ridership occurred during the month of June, registering only 15,777 riders. Ridership along Route 31 increased nearly 8 percent from FY 2008 to FY 2009.

Route 46: South Deerfield/UMass

Transit service between South Deerfield and UMass is provided by Route 46 which also provides transit

service to North Amherst Center. Route 46 operates from 7:00 a.m. until a little after 10:30 p.m. on Monday through Saturday and operates a limited schedule (3 runs) on Sundays. During the UMass academic year, Route 46 provides 6 runs to South

Deerfield Center each weekday, as well as 5 runs on Saturdays and 3 runs on Sundays, for a total of 38. When UMass is not in session, the number of weekday runs remains the same while the number of runs on the weekends decreases to 4 runs and 2 runs on Saturdays and Sundays, respectively. In 2009, Route 46 carried 2,425 riders during its peak month of September. The lowest ridership occurred during the month of August, registering only 951 riders.

Paratransit/ADA Transit and Dial-A-Ride Van Services

The FRTA and PVRTA each offer paratransit and dial-a-ride services, also referred to as

demand-response transportation, to elderly and disabled residents in their member communities. In all Franklin County communities, except Monroe, van transportation through the FRTA or PVRTA is available for seniors age 60 and over and for some people with disabilities that affect their ability to drive and use regular fixed-route transit service. In Monroe, MassHealth clients have access to van service through the Berkshire Regional Transit Authority (BRTA) for medical trips. All of the BRTA, PVRTA, FRTA buses and vans are wheelchair accessible. Priority for van service is given to people with disabilities and seniors and for essential purposes, such as medical care.

Table 9-5: Paratransit Service in Franklin County

Town	Paratransit Service	Demand Response Service Provider	MedRide Service Provider
Ashfield	No	Shelburne COA	Greenfield COA
Bernardston	No	Bernardston COA	Greenfield COA
Buckland	Yes ¹	Shelburne COA	Greenfield COA
Charlemont	Yes ¹	Shelburne COA	Greenfield COA
Colrain	No	Shelburne COA	Greenfield COA
Conway	No	Shelburne COA	Greenfield COA
Deerfield	Yes ^{1,2}	FRTA	Greenfield COA
Erving	Yes ¹	Erving COA	Greenfield COA
Gill	Yes ¹	FRTA	Greenfield COA
Greenfield	Yes ¹	FRTA	Greenfield COA
Hawley	No	Shelburne COA	Greenfield COA
Heath	No	Shelburne COA	Greenfield COA
Leverett	Yes ¹	Amherst COA	No
Leyden	No	FRTA	Greenfield COA
Monroe	No	No	No
Montague	Yes ¹	FRTA	Greenfield COA
New Salem	No	Orange COA	Greenfield COA
Northfield	No	Bernardston COA	Greenfield COA
Orange	Yes ¹	Orange COA	Greenfield COA
Rowe	No	Shelburne COA	Greenfield COA
Shelburne	Yes ¹	Shelburne COA	Greenfield COA
Shutesbury	No	Stavros	Greenfield COA
Sunderland	Yes ²	Hulmes Transportation	No
Warwick	No	Orange COA	Greenfield COA
Wendell	Yes	Orange COA	Greenfield COA
Whately	Yes ¹	FRTA	Greenfield COA

Notes:

1: ADA Paratransit services are provided for disabled individuals who are available within ¾ mile of a fixed FRTA route corridor and cannot navigate or access a regular fixed route due to their disability.

2: ADA Paratransit services are provided for disabled individuals who are available within ¾ mile of a fixed PVTA route corridor and cannot navigate or access a regular fixed route due to their disability.

Sources: Information was obtained from the Franklin County Home Care Corporation, FRTA, and PVTA.

Under the American with Disabilities Act (ADA) of 1990, paratransit services must be provided in all areas with local fixed route bus services for people who can't use the local bus system due to their disability. The ADA seeks to provide people with disabilities the same access to public transportation as people without disabilities. The FRTA's Paratransit Services are for disabled individuals who are available within three-quarters (¾) mile of a fixed route corridor and cannot navigate or access

the provided fixed route service due to their disability.

There are several limitations to ADA transportation services in Franklin County, largely a result of its rural nature. Large land area and low population density are the primary factors for the county's limited fixed-route transit services and as a result, there are no requirements to provide ADA transportation services for at least half of Franklin County towns. Much of the van service which is provided in Franklin County is, therefore, demand response service, which is optional and offered at the regional transit authorities' discretion. For the towns with fixed-route transit services, ADA van service is available to qualifying residents during the regular route's hours of operation.

The FRTA and PVTA each contract with local private van companies to provide both the mandated ADA paratransit service and optional dial-a-ride service within their regions. For the FRTA, many of the providers are local Councils on Aging (COAs) that also offer

other services to seniors.

Additional Programs and Services

Human Service Transportation

Additional transportation services, such as van transportation, are offered to qualifying Franklin County residents through the Department of Developmental Services (DDS), Department of Public Health (DPH), and the Division of Medical Assistance (DMA), as well as other various state-level human service agencies. The FRTA can arrange

transportation by request for elders and the disabled residents in the area through a network of public and private transportation providers. The travel that can be funded through these programs is often limited to a few specific types of trips, such as medical trips or transportation to job training. Regional transit authorities generally coordinate the transportation services for the State's human service agencies. Transportation services for MassHealth, DMA, and DPH in Franklin County are currently coordinated by the FRTA and provided by private transportation operators.

In Fiscal Year (FY) 2010, there were 79,376 Human Service transportation rides provided through the FRTA, including for the following programs: 33,722 rides through Medicaid, 7,606 rides for the DDS, 38,016 rides for Dayhab, and 32 rides for the DPH.

Compared to past ridership this has more than doubled, increasing by 128 percent since FY 2005. In addition to these services, the FRTA also provides its fixed bus route service to veterans at no charge with a valid Department of Veterans Affairs photo ID (effective August 31, 2009).

Community Transit Services

Community Transit Services (CTS), a major private transportation provider in the region, was established in 1998 to provide transportation for work communities in the Athol-Orange areas, and to help improve access to jobs for low-income individuals. CTS is run through the Community Transportation Association of America (CTAA), a national professional membership association of organizations and individuals committed to removing the barriers of isolation and improving mobility for all residents in rural communities. CTAA received a Congressional funding earmark to launch CTS's services and has worked jointly with the FRTA, MART, FRCOG, Montachusett Regional

Planning Commission, MassDOT, and the Federal Transit Administration to improve public transportation access in the Northern Tier region along Route 2.

CTS provides curb-to-curb transportation based on a demand-responsive system. It operates Monday through Fridays and has reduced hours on Saturdays. One of CTS's primary functions is to assist residents in accessing the FRTA fixed route, Route 32, along Route 2 from outlying areas in Athol and Orange, and to provide transportation from homes and businesses to the Route 32 bus stops. Since its first year, CTS's ridership has more than doubled.

CTS also contracts with the FRTA and MART to provide human service transportation for clients of

the Massachusetts DPH, DDS, and the DMA. With the remaining capacity available, CTS provides rides in the Athol-Orange area for various other purposes including job training, local medical appointments, grocery shopping, and for recreation and social purposes.

SAFETEA-LU Programs

Locally Coordinated Plan for Franklin County

The FRCOG has created a "Locally Coordinated Plan for Franklin County" related to the JARC and New Freedom funding programs. This plan identifies transportation providers in the region and key public transit service gaps in Franklin County. In 2007, the FRCOG identified the following service gaps:

- Additional routes are needed to allow access to employment, education, and services;
- Evening and weekend service should be increased to allow access to employment, education, and services;
- Better coordination and connectivity between transportation providers serving Franklin County is needed so that users can more easily transfer and move from point A to point B as efficiently as possible; and
- Better links between transportation modes are needed.

The plan then provides a set of evaluation criteria in which the FRCOG will evaluate and rank projects that have been submitted for consideration of JARC and New Freedom funding. The criteria include:

- The number of passengers served;
- The degree of provision of access to employment, education, or services; and
- The degree to which Environmental Justice populations are served.

The plan also identifies the priorities in which projects will be funded. The top three priorities include: 1) a focus on funding operations over capital projects; 2) provide connections to other transit services; and 3) provide access to employment, education, and services.

Job Access and Reverse Commute (JARC) Program

The Job Access and Reverse Commute (JARC) Program is a source of federal funding that was created through federal transportation legislation and is administered by MassDOT. The focus of the JARC Program is to improve transportation mobility for low-income individuals to help them access and retain employment, as a means to assist people in moving off of public assistance. The JARC Program provides competitive grants to local governments and non-profit organizations to develop transportation services to connect low-income persons to employment and support services. The JARC Program and funding have emphasized public transportation access to and from suburban areas, but has also provided funding for rural areas. In Massachusetts, non-urbanized areas with populations under 50,000 are projected to received a total (statewide) of approximately \$651,000 in JARC funding during the 2011-2015 timeframe. These funds are highly competitive.

In November 2009, the FRTA received \$100,000 in JARC funding for three years to expand services to West County. More specifically, this additional funding source is aimed at expanding services for Route 41 (Charlemont/Greenfield). The operating schedule for this route has historically been dependent upon the academic schedule of the

Academy of Charlemont and the additional funding has expanded services on this route by adding 2 runs per day as well as creating a more consistent operating schedule throughout the year to better accommodate the commuting needs of its riders.

In 2009, the FRTA also submitted a grant application to augment service on Route 32 (formerly the G-Link) connecting Greenfield and Athol. The JARC program awarded FRTA \$144,000 for this service.

New Freedom Program

The New Freedom Program is a program administered by the Federal Transit Authority (FTA) which developed from the New Freedom Initiative introduced under Executive Order 13217, "Community-Based Alternatives for Individuals with Disabilities." The goal of the New Freedom Program is to provide additional tools to overcome existing barriers facing Americans with disabilities seeking integration into the work force and full participation in society. A lack of adequate transportation has consistently been identified as a primary barrier to work for individuals with disabilities. This program seeks to reduce barriers to transportation services and expand the transportation mobility options available to people with disabilities.

Private Carriers and Other Transportation Services

Bus Service

Peter Pan Bus Lines offers service to Franklin County with two trips to Greenfield and Deerfield each day. One trip runs southbound from Greenfield to Springfield, and one runs northbound from Springfield to Greenfield. Peter Pan currently uses the Upper Pioneer Valley Visitors Center located at the Route 2 Rotary in Greenfield to pick up and discharge passengers. In 2007, ridership was estimated by Peter Pan to be between 5 and 7 passengers boarding or discharging per day. Reports today show that ridership is still light. The service operates everyday linking Greenfield, Deerfield, Amherst, Northampton, Holyoke Mall, and Springfield. Passengers can switch buses in Amherst and Springfield for other destinations,

including: Worcester, Framingham, Boston, and points in Connecticut and New York.

Greyhound, formerly the Vermont Transit Company, operates two bus trips daily that pass through Greenfield on their Springfield – White River Junction, Vermont run. Greyhound uses the curb stop at Court Square to pick up and discharge passengers. From Springfield, riders can connect to other routes to Hartford, New York City, and cities farther south such as Philadelphia and Washington, DC. Ridership on this line has decreased recently causing the number of runs to be cut back to two a day, rather than the three that previously were run.

Taxi Service

Taxi service has increased in recent years for Franklin County. Previously, there was only one service, but there are now two taxi companies serving Franklin County: About Town Taxi and ABC Cab. There are also a few other cab companies based in towns close to the region and provide service to some Franklin County towns, such as Athol Taxi in Athol. Taxi companies also operate from Gardener to the east; North Adams to the west; Winchester, New Hampshire to the north; and Northampton and Amherst to the south.

Other Private Services

There are several limousine services in Franklin County. There are a larger number of van and charter bus services based in Franklin County. One of the largest bus services in the county is F.M. Kuzmeskus, Inc, which is based in the Town of Gill.

Current Activities and Future Plans

The FRCOG periodically conducts studies to assess transit services and ongoing unmet transit needs in the Franklin County Region. The FRCOG is committed to working to ensure that all Franklin County residents have access to transportation facilities and services. To do so, FRCOG coordinates with the FRTA to explore ways to improve the region's bus system and work specifically to support better access to jobs, training, and needed services for low-income residents.

North County Transit Study

The objective of the currently underway North County Transit Study is to document prospective ridership demand, potential routes and times, funding needs, and other logistics necessary to implement a year-round transit route serving the North County towns of Bernardston, Northfield, and Gill. There is currently no transit service to or from this area of the county nor are there connections to other transit routes. Previous service was sporadic and based on the Northfield Mount Hermon School schedule, making it difficult for residents to use the route since the days and times of runs were inconsistent. Service was discontinued completely at the end of FY2009. In December 2009, the Northfield campus was sold and plans to create the C.S. Lewis College were formed. It is expected that the new college will bring in approximately 800 students beginning in the 2012 Academic Year and will contribute to transit demand in the area. The final product of this study will be a report listing potential ridership, routes, times, fares, and funding sources that can be used to implement broader North County transit services.

Franklin Regional Transit Center

Since the year 2000, the FRCOG has participated in a multi-organizational effort to develop a Regional Transit Center in Franklin County. In 2004, a location was chosen for the facility, which is located in Greenfield's downtown Urban Renewal District. The Regional Transit Center, which will be owned and operated by the FRTA, will be an approximately 20,800 square foot building that will centralize all transit operations in the region. The facility will sell tickets, provide rest rooms and waiting areas sheltered from the weather, and will provide office space for the FRTA and the FRCOG. The building is intended to be a model "green" structure incorporating sustainable energy and building techniques wherever possible. Construction began on the Transit Center in October 2010 and is expected to be completed in December of 2011. In addition, the site is adjacent to rail lines with funds set aside to build a rail passenger platform. As Chapter 7, "Passenger Rail" explained, passenger rail will be returning to Greenfield along the

Connecticut River line with a planned stop at the Regional Transit Center in Greenfield.

Environmental Justice

The FRCOG continues to work on implementing environmental justice within the region. Since Fiscal year 2001, the FRCOG has had a specific task related to environmental justice in its annual Unified Planning Work Program. Through this task, the FRCOG conducts outreach to low-income residents and minority populations, and works with the regional transit agencies to ensure that transit planning and programming activities in Franklin County are nondiscriminatory and as inclusive as possible, and that low-income and minority residents have good access to transit services.

In 2003, FRCOG conducted a review of transit services in the region to determine if the Environmental Justice target areas in the county have a higher or lower level of transit service compared to the region as a whole. The analysis showed that in many respects, the populations within the Environmental Justice target areas are better served by the public transit system than Franklin County residents as a whole. However, while the Environmental Justice target areas have some of the best transit access in the region, the level of service is still in need of improvement. For example, there is no evening or weekend service to any of the target areas. When the 2010 Census data becomes available at the town level, FRCOG will update this analysis to determine whether this situation remains or has changed over time.

Alternative Transportation Plan

In 2009, FRCOG staff completed an *Alternative Transportation Plan* examining Franklin County's potential alternatives to the singly-occupied vehicle. The public transit system is a strong option for county residents, but it does have weaknesses. The Plan identified the following challenges of the current public transit system:

- The greatest challenge to providing more transit service in Franklin County is the limited funding available. One of the most popular bus routes in the region is the G-Link Route, which runs between Greenfield

and Athol (now called Route 32). The G-Link Route has no secure long-term funding despite the fact that ridership continues to increase every year on this route.

- Limited availability of funding means that most of the public transit service in Franklin County is available only on weekdays during the daytime hours.
- Studies have shown that the county's Environmental Justice target areas are better served than the rest of the county population by public transit. However, the level of service is not sufficient for their needs.

Regional Transportation Plan Survey

The following comments were compiled from the RTP survey that was completed as part of the public participation process for this RTP update. Improving transit services in Franklin County was clearly a very high priority for the majority of survey respondents. They provided the following ways in which they would like to see the public transit system expanded:

- Provide more service to outlying towns;
- Add evening and weekend service to routes;
- Coordinate scheduling of route for workers; and
- Improve on-demand service for the elderly and handicapped.

Recommendations for Transit and Paratransit Services

Short Term Recommendations

- Work with the FRTA and the PVRTA to find ways to provide **Sunderland and Leverett seniors and residents with disabilities with transit/paratransit access** to the Frontier Senior Center in South Deerfield and to other Franklin County towns, such as Greenfield and Montague. (Note: Sunderland and Leverett are PVRTA member towns.)
- **Promote current paratransit, Dial-a-Ride, and Access to Jobs transportation services** among low-income residents and disabled

residents who could benefit most from these services.

- Consider **potential locations for additional bus stops in Shelburne Falls and along Route 2** factoring in safety concerns, the usefulness of the locations for bus riders, and the stops' impacts on the route schedule; then, propose the most suitable locations for new stops.
- Assist MassDOT with the development of the **Park and Ride** lot that is planned for Whately near South Deerfield and Interstate 91.
- Coordinate between the FRTA and the PVRTA and investigate options for providing the planned **Whately Park and Ride lot** with transit services from both transit authorities.
- Investigate options for providing better **transit services to the Whately Park and Ride lot, Upper Pioneer Valley Visitors Center Park and Ride**, and other lots, as they come online.
- Conduct meetings with town officials and local Council on Aging representatives to **provide information about bus services and funding costs** and to discuss any issues with current services and any interest in service expansions. These local meetings, and publicity about them, would be another way of increasing residents' knowledge of the transit system and gaining additional input on residents' transit needs.

Long Term Recommendations

- Explore the interest and costs of **increasing van services for seniors and residents with disabilities**, focusing on parts of the West County area, such as the section of Conway near Deerfield, that currently have less than weekly van service and access. Through discussions with the Shelburne Senior Center and FRTA, evaluate the extent to which West County residents who wish to use the van services for trips are currently unable to do so.

- Consider **extensions of the West Route** to communities off of Route 2 and the possibility of bus service along Route 116 between West County and South Deerfield.

Ongoing Recommendations

- Continue to work with the regional transit authorities and other transportation providers to: **monitor and evaluate routes**; to address unmet transportation needs and current problems with connectivity between routes and inter-regional service connections.
- Continue to work with the FRTA, PVRTA, and the MART to **keep area legislators informed about the regional importance of Route 32 (formerly G-Link) and Route 31 (formerly Valley Route)** and about the demand for expanding the routes to include additional runs and evening and weekend service to better assist residents with access to employment, education, and training opportunities. Importantly, work to **obtain permanent funding for Route 32**.
- Support the continued operation and **expansion of transit services to the Northern Tier** (north of Route 2) to promote access to jobs.
- Continue to **monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study**, particularly the recommendations that could most affect Franklin County commuters, including: the creation of a park and ride facility in Gardner and the extension of commuter rail service west of Fitchburg.
- Support the reinstatement of **evening and weekend transit services** in Greenfield and Montague to meet transit rider demand.
- Support the provision of **paratransit and dial-a-ride van services for elderly residents and riders with disabilities**, and work to expand van transportation availability, especially in areas with less than

daily services and as the elderly population in the region grows.

- **Expand current outreach and publicity efforts** to provide information about FRTA transit services and to encourage bus usage. Current, accurate information on bus services and schedules ideally should be available from a variety of locations. Current information on bus services and schedules should also be available in a variety of mediums electronically through the web sites of the FRTA, regional organizations, and town governments, and in print through local newspapers and through the distributed schedules. Outreach efforts should target the populations who are most likely to use transit services and to need transit assistance, such as low-income residents, disabled residents, and the elderly.

10



Livability: Bicycle and Pedestrian Facilities

10 Livability:

Bicycle and Pedestrian Facilities

Since 1991 and the passage of the federal Intermodal Surface Transportation Efficiency Act (ISTEA), bicycling and walking have been recognized as viable and efficient modes of transportation. This priority was re-established with the passage of ISTEA's successors, the Transportation Equity Act for the 21st Century (TEA 21) in 1997, and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005. Consequently, bicycle and pedestrian facilities are included as a regular part of transportation planning activities on the federal, state, regional, and local levels.

Not only are bicycling and walking integral components of the transportation system in Franklin County, but they are also crucial components that help make the county a livable community. The U.S. Department of Transportation and the Federal Highway Administration have recently focused their attention on the important role these modes of transportation play and the many benefits they provide a community, including: reduction of greenhouse gases and other air pollution, lowered energy costs, less use of land and pavement, increased health benefits for people, economic savings, increased social interactions, and community revitalization. Bicycling and walking are vital to making a community livable. Ray LaHood, U.S. DOT Secretary of Transportation, defines livability as, *"being able to take your kids to school, go to work, see a doctor, drop by the grocery or post office, go out to dinner and a movie and play with your kids at the park – all without having to get in your car."*

This chapter details the many efforts Franklin County has made to integrate bicycling and walking into its transportation infrastructure so that the county is more livable. This chapter also looks

forward to the ways in which bicycling and walking can be improved so that livability is enhanced for its residents.

The Franklin Regional Council of Governments (FRCOG) routinely includes bicycling and walking in the Regional Transportation Plan (RTP) as well as other local and regional planning documents. In addition, the importance of bicycle and pedestrian facility planning in Franklin County has been reinforced in several planning documents completed during the past five years. During 2009, an update of the *1993 Franklin County Bikeway Plan* was completed. A *Franklin Regional Pedestrian Plan* was also completed during 2010. Additionally, planning for and discussions of bicycling and walking facilities are included whenever appropriate in local and regional documents such as: local open space and recreation plans, scenic byway corridor management plans, and town master plans.

Public input received during recent planning processes reflect a strong and growing interest in developing and promoting safe and viable bicycle and pedestrian facilities. During the public participation process completed for the Regional Transportation Plan, a number of comments were received suggesting that improvements to promote bicycling and walking be made.

Guiding Policies and Programs

There are a number of national and state programs created recently that focus on the promotion of bicycling and walking and their connection to quality of life and the environment. The section below briefly describes these programs, which help inform the recommendations in this chapter.

National Livable Communities Initiative

Creating environments and infrastructure that are conducive for bicycling and walking are an important component of a livable community. The United States Department of Transportation announced that it will work to promote livable communities. In June 2009, the Partnership for Sustainable Communities was formed by the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation

(DOT), and the U.S. Environmental Protection Agency (EPA). The guiding principles of this collaboration include the following:

- To enhance the unique characteristics of all communities by investing in healthy, safe, and walk-able neighborhoods—rural, urban, or suburban; and
- To develop safe, reliable and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

MassDOT Launches GreenDOT

The Commonwealth of Massachusetts has made a strong commitment to creating livable communities and sustainable transportation. As part of this effort, MassDOT launched GreenDOT in 2010, which is a comprehensive environmental responsibility and sustainability initiative. GreenDOT is driven by three primary goals: reduce greenhouse gas (GHG) emissions; promote the healthy transportation options of walking, bicycling, and public transit; and support smart growth development. GreenDOT calls for MassDOT to incorporate sustainability into all of its activities, from strategic planning, to project design and construction, to system operation.

Global Warming Solutions Act

The Global Warming Solutions Act, signed by Governor Patrick in 2008, mandates ambitious greenhouse gas reduction targets. Recognizing that the transportation sector generates more than one-third of the total greenhouse gas emissions produced in Massachusetts, the GreenDOT initiative will achieve these reductions through a range of measures. Working in cooperation with regional planning agencies, MassDOT has set a statewide greenhouse gas reduction target of 25 percent below 1990 levels for 2020. The state plans on meeting these targets by balancing highway system expansion projects with other projects that support smart growth development and promote public transit, walking, and bicycling.

Healthy Transportation Compact

As part of the 2009 Transportation Reform Legislation, the Commonwealth of Massachusetts also launched the Healthy Transportation Compact. The Healthy Transportation Compact is an inter-agency initiative designed to facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment, and create stronger communities. MassDOT views the Compact as an opportunity to strengthen its commitment to public health and increased access for bicyclists and pedestrians.

2006 MassDOT Project Development and Design Guide

A significant step in recognizing bicycling and walking as viable means of transportation came with the 2006 release of the MassDOT's *Project Development and Design Guide* (referred to as the *Design Guide*). This guide redefines how new projects are designed, and also serves to ensure that MassDOT's transportation investments encourage projects that are context sensitive while meeting the needs of all system users. The *Design Guide* treats non-motorized transportation modes as equal users of the roadway network. Through this comprehensive approach to roadway design, the guide mandates the development of "complete streets." The concept of complete streets refers to roadways that are designed to accommodate all users, including bicyclists and pedestrians. The 2006 *Design Guide* and the new design process provide opportunities and flexibility in the design of bicycle and pedestrian facilities in Massachusetts based on each specific situation.

Another important guide has been MassDOT's design directive, "Bicycle Route and Sharing the Road Signing Policy," issued in 1998. This policy applies to all projects where the proposed design includes a bicycle route component and also when bicycle routes are proposed on state highways whether or not a construction project is involved.

Bicycle Facilities Planning Efforts

Statewide Planning Efforts

Massachusetts Bicycle Transportation Plan

In 2008, the Massachusetts Executive Office of Transportation and Public Works (now the MassDOT Office of Transportation Planning) completed an update of the *Massachusetts Bicycle Transportation Plan*. The 2008 Plan provided a complete inventory of existing on-road and off-road facilities, projects in the pipeline, and long-term facility proposals.

The Plan also recommends a 740-mile, seven corridor Bay State Greenway (BSG) network consisting of on-road and off-road statewide facilities. The seven corridor BSG network includes two recommended routes that travel through Franklin County. The Connecticut River Valley Corridor (West) is an on-road route that travels from the Vermont border to the Connecticut Border. The second route is the Connecticut River Valley Corridor (East) that travels from the New Hampshire border to Chicopee. This route is also an on-road route. In addition, the plan identifies twenty-two secondary network routes. These routes are intended to be a secondary part of the BSG network and provide connections between the primary system and key population and activity centers. Two of these secondary routes travel into Franklin County. These routes were incorporated into FRCOG's 2009 *Franklin County Bikeway Plan Update*.

In addition to identifying this statewide bicycling network, other *Massachusetts Bicycle Transportation Plan* recommendations include general steps to promote bicycling:

- Better identify state roads and bridges where bicycles are legally permitted, but do not accommodate bicycles today;
- Expand the "Share the Road" signs and outreach programs;
- Develop bicycle tourist publications through the Massachusetts Office of Travel and Tourism (MOTT);

- Improve safety through education and enforcement initiatives and facility performance measurement; and
- Further quantify the benefits of investments in projects and programs that improve bicycling conditions.

Franklin Regional Planning Efforts

The FRCOG supports the use of bicycles as a viable transportation alternative to the automobile. In addition, the accommodation of bicycles and the construction of bicycle facilities are viewed as an integral part of the promotion of livable and green communities. The FRCOG, through its transportation planning program, has worked to plan and develop facilities locally, regionally, and inter-regionally which will increase the use of bicycles for transportation.

The FRCOG recognizes that there are challenges associated with the use of bicycles for transportation. The varied geography and topography of Franklin County can be an obstacle to bicycling for transportation. The rural landscape of the county generally means that individuals are

traveling longer distances to work and to run routine daily errands. In addition, the hilly topography in some locations means that bicycling can be very physically challenging as well. In order to plan effectively for the region, these challenges are taken into account when bicycle routes and facilities are developed.

At the same time, these geographic conditions and topographic features also greatly contribute to the appeal

Survey results indicate that 40% of respondents feel that on-road bicycle routes in Franklin County have improved. Additionally, 50% of respondents feel that off-road bicycle facilities have improved.

of bicycling and walking in Franklin County. There are many rural roads with low traffic volumes and picturesque rural landscapes that are pleasant for riding. The *Franklin County Bikeway Plan Update* considers the draw of the region as a location for bicycle touring and tourism related to bicycling. Generally, planning for bicycle facilities in the region, although primarily focused on

transportation, also includes considering potential recreational and tourism-related bicyclists' needs and interests. Increased resources to promote bicycle tourism are also a goal of the *Massachusetts Bicycle Transportation Plan*.

In addition, it can be difficult to plan routes and separate facilities for the varying skill levels of the individuals who may be bicycling in Franklin County, all of whom have different and sometimes conflicting needs and goals. These potential bikeway users include novice bicyclists (including children), intermediate bicyclists, expert recreational/racing bicyclists, and commuters. During all planning exercises, the specific bicycle routes or facilities take into account the skill level and experience of the potential user.

2009 Franklin County Bikeway Plan Update

In 2009, the FRCOG completed an update of the *1993 Franklin County Bikeway Plan*. The 1993 Plan identified the route of the original Franklin County Bikeway network which travels through the central section of the county along the Connecticut River Valley. As of 2010, this approximately 44-mile network has been completed.

The *2009 Bikeway Plan Update* expands this original bicycle network to cover the entire county and to link to neighboring regions. The 2009 Bikeway Plan Update identifies bicycle links to the south to Hampshire County, to the west to Berkshire County, to the east to Worcester County, and to the north to Vermont and New Hampshire. The Update also expands and diversifies the regional objectives to include recreation, tourism, and quality of life related bicycling issues. Additionally, the Update considers the needs of those who are bicycling for different purposes including commuters, students, store patrons, outdoor enthusiasts, and visitors to the region. The recommendations and future projects of the Update are included in this chapter in the next section.

Existing and Planned Bicycle Facilities

The Original Franklin County Bikeway Network

Until recently, the focus of bicycle transportation planning activities has been on the design and establishment of the original section of the Franklin County Bikeway. The initiative to design and construct this 44-mile regional bicycle network began thirty years ago. The project had continuous and unwavering support throughout the development, design, and construction process. This original section of the Franklin County Bikeway consists of both on and off-road bicycle routes centered along the Connecticut River. The Connecticut River valley is the more populated area of the county and is also the easiest for bicycling due to the relatively flat nature of the topography in the valley. At this time, the original sections of the Franklin County Bikeway have been constructed. The components of the original Franklin County Bikeway include the following off-road facilities: the Riverside Greenway, the East Mineral Road Bridge, and the Canalside Trail; and the following shared roadway facilities: the Northfield Connector, the Greenfield-Montague Loop Route, the Connecticut River Route, and the Leverett-Amherst Route. Below are descriptions of the off-road facilities that have been constructed.

The Riverside Greenway (Greenfield)

The Riverside Greenway was completed in the Fall of 2004. It is a one-mile off-road bikepath located in the Town of Greenfield. This path connects a densely populated residential area with a heavily used public recreation facility. It also connects to nearby Greenfield Community College and downtown Greenfield. The path is owned and maintained by the Town of Greenfield and includes a bicycle and pedestrian bridge over the Green River.

East Mineral Road Bridge (Montague and Erving)

The East Mineral Road Bridge was a closed vehicle bridge that was redesigned and reconstructed for use as a bicycle and pedestrian bridge. The reconstruction was completed in the Summer of 2005. The bridge crosses the Millers River from East

Mineral Road in Montague to River Road in Erving, and provides an important link in the Franklin County Bikeway network. The East Mineral Road Bridge crosses the Millers River below Route 2 and provides access north and south of Route 2 without having to cross at grade. Route 2 is a heavily traveled road that is not recommended for bicycle travel because of the high vehicle speeds, lack of shoulder, and narrow travel lanes. The East Mineral Road Bridge allowed the bikeway to be moved off of Route 2 and onto less heavily traveled roads, while still providing access to the Connecticut River, as well as the Northfield Mountain Recreation and Environmental Center, and downtown Northfield.

Canalside Trail (Deerfield and Montague)

The Canalside Trail is located in the Towns of Montague and Deerfield. The Canalside Trail travels from the Connecticut River Great Falls Discovery Center and Unity Park in the Village of Turners Falls in Montague, to McClelland Farm Road (located off of River Road) in northeast Deerfield. This section of the bikeway is a 3.27-mile off-road paved multi-use path which travels adjacent to the Connecticut River Canal in Turners Falls and along an abandoned rail corridor (including a railroad bridge over the confluence of the Deerfield and Connecticut Rivers) in Montague City and Deerfield. The Connecticut River Great Falls Discovery Center is considered to be the start and terminus of the Franklin County Bikeway and includes ample public parking at this location. The Discovery Center is a visitors' center and conservation education facility for the 410-mile Connecticut River Valley Linear Park that was developed by the Massachusetts Department of Conservation and Recreation, Massachusetts Department of Environmental Protection, and the U.S. Department of Fish and Wildlife. The construction of the Canalside Trail was completed in the Fall of 2007 and officially opened at a ribbon cutting ceremony on May 30, 2008.



Former railroad bridge over the Connecticut River on the Canalside Trail

Other Existing Facilities

There are a few other limited bicycle facilities in the county including: an approximately ½ mile path on the Greenfield Community College (GCC) campus from Colrain Road; a shared, signed shoulder along Route 112 in Buckland; and an approximately ½ mile bikepath along Turnpike Road in Turners Falls providing access to the Turners Falls High School.

2009 Expansion to the Franklin County Bikeway Network

The *2009 Franklin County Bikeway Plan Update* identified additional shared roadway routes and potential off-road facilities throughout Franklin County. The shared roadway routes connect different parts of Franklin County and neighboring regions and states. These routes have been included in the 2009 Franklin County Bikeway Route Maps. A future project is to identify locations for Franklin County Bikeway logo signs and to install the signs along these routes and link to other signed sections of the bikeway. Because of the greatly varying topography of the areas outside of the original Franklin County Bikeway, the newly recommended routes have been classified based on levels of riding experience. The routes received the following classifications: novice, intermediate, and advanced, and can be seen in the map at the end of the chapter. The expanded planned routes of the Franklin Bikeway now include the following new shared roadway routes:

- West Franklin County Routes: Buckland/Ashfield Loop, Western Franklin County Loop, West County-Greenfield Connector, Shelburne-Vermont Connector, and the Ashfield-Williamsburg Connector.
- Central Franklin County Routes: River Road Loop, River Road Connection to Hampshire County, Deerfield Upper Road-Deerfield Lower Road Loop, Greenfield Leyden-Plain Field Loop, Whately-Conway Loop, and the Deerfield Route.
- East Franklin County Routes: Shutesbury Loop, Franklin County to Vermont Loop, Orange-Greenfield Route, Northeastern Franklin County Route, and the New Hampshire Connector.

The *2009 Franklin County Bikeway Plan Update* also recommended several off-road bicycle facilities. The off-road projects described in the section below are proposed bicycle infrastructure improvement projects that are in varying stages of planning. The work that has been completed to date on each project and the stage of development is described in the following summary.

Millers River Greenway (Orange and Athol)

The Towns of Orange and Athol have identified the development of a bikeway/greenway along the Millers River as a priority, and have taken the initial steps towards completing a design. In 2000, a preliminary feasibility study and route assessment was completed for a potential off-road bicycle facility. Initially, the proposed project was to create a greenway along the Millers River connecting Orange and Athol. However, after an assessment of the right-of-way and environmental impacts, this concept was determined to be infeasible and the idea of an on-road bicycle facility was established. Another feasibility study was then prepared.

During 2004 and 2005, the FRCOG worked with the Montachusett Regional Planning Commission (MRPC), the Town of Athol, and the Town of Orange to complete additional conceptual design work for the Millers River Greenway. Further analysis of the on-road route that had been recommended as a result of the feasibility study was completed. A revised route was developed which included much of the on-road route identified in the 2000 study,

but also incorporates an off-road bicycle path section in Athol.

The proposed route is approximately 6 miles long, beginning at the Orange Riverfront Park located on the south side of the Millers River in downtown Orange. The route continues east on East River Street to its intersection with Daniel Shays Highway (Route 202). The route then turns north and follows Daniel Shays Highway to an abandoned road that is located just south of the intersection of Daniel Shays Highway and Route 2A. The proposed route travels along this abandoned road (Procter Avenue), across 3 privately owned parcels and then through land that is publicly owned. The route reconnects with residential neighborhood streets (Jones Street, South Street and onto Canal Street) and then terminates in Athol at the Millers River Environmental Park, which opened in the Summer of 2006. At this time the design of the Millers River Greenway is conceptual, although it appears to be feasible. Further conceptual design work is needed in order to determine the most appropriate and feasible solutions to some existing design issues. While much of the off-road section of the route travels over land that is publicly owned, the proposed route does cross three privately owned parcels. There is also a location along the off-road section of the route in which a crossing of the Millers River is required. At this time, funding is needed for the design/engineering of the path. Once the design is completed, it is anticipated that state/federal funds would be sought for construction.

Erving – Wendell Path

During the development of the Erving Master Plan (2002) and also the public participation process for the Route 2 Safety Improvement Project, the lack of alternatives that accommodate bicycling on Route 2 in Erving was noted as a community concern. It was recognized that Route 2 is not ideal for bicyclists and pedestrians because it has a narrow and winding layout, lacks sidewalks and roadway shoulders in many locations, and has high traffic volumes.

The FRCOG reviewed potential bicycle and pedestrian links in Erving as a work task in the Fiscal Year 2002 3C Transportation Unified Planning Work Program (UPWP). Possible bicycle and/or pedestrian connections, other than the use of Route 2, to link the areas of Erving known as Farley and Erving'side to Erving Center were explored. The high traffic volume on Route 2, which is both a National Highway System road and Erving's Main Street, makes it difficult and dangerous for individuals to access Erving Center by bicycle from one of the adjacent residential neighborhoods or from other villages within the Town of Erving. Several possible alternatives were identified and a preliminary assessment was completed. Considered routes included potential connections from Mountain Road to the east, and a potential route through the town-owned cemetery on Cemetery Road to Flagg Hill Road.



Old Farley Road in Wendell

Another option that was identified as a potential off-road walking/bicycling route is an existing dirt road that is located to the south of the Millers River in Wendell and referred to as Old Farley Road. The route is accessible from Arch Street off of Route 2 in Erving Center. Old Farley Road travels west along a dirt road for approximately 2 miles and connects to Posk Place in the Farley section of Wendell. Much of this route travels on land within the Wendell State Forest, which is owned by the Massachusetts Department of Conservation and Recreation (DCR). The intention is to consider the development of a soft surface trail instead of a paved surface due to

the natural setting and proximity to the Millers River. In Farley, the trail terminus at Posk Place is located near the Metacomet-Monadnock-Mattabesett (M-M-M) Trail hiking trail and also a popular fishing location.

There is also a possibility that this route could continue west to Farley Road and Mormon Hollow Road which links to Wendell Road in Montague and connects to the Village of Millers Falls. Another possibility is this route linking to the east to Wendell Depot. These two extensions were not examined as part of the 2002 UPWP task but were noted as possible extensions during field work and mapping work. Further exploration of this Wendell bikeway option has been included in the 2010-2011 Franklin Regional Unified Planning Work Program.

Deerfield Route (Route 5/10 Bypass)

The Deerfield Master Plan (April 2000) identified a specific route that would provide an alternative to bicycling on Route 5/10 in Deerfield. The plan recommended the construction of an off-road bike path to the south of the Cheapside Bridge and to the west of Route 5/10. The proposed route travels near the Deerfield River to Pine Hill Road (or Old Ferry Road which is an old 1732 county road), and would provide a connection for bicyclists into Historic Deerfield. There is currently a dirt road along a portion of this route that could potentially serve as the bike trail. However, there are a number of obstacles to the implementation of this proposed bike path that require further investigation prior to determining whether this route is feasible. There are wetlands between Route 5/10 and Pine Hill Road that are a potential obstruction to the development of this bike path. In addition, this route travels over private property and it is not known whether a legal right-of-way or access to this route could be secured. A thorough study of the feasibility of this route will need to be completed to determine if an off-road bicycle path could be developed.

Bicycle/Pedestrian Bridge on Greenfield Road

The existing shared roadway Connecticut River Route is a spur that travels along the Connecticut River from Montague to Sunderland. This route uses Greenfield Road in Montague, but currently

detours onto Hatchery Road because of the absence of a bridge over the railroad tracks. The bridge was removed and has not yet been replaced. A new bicycle and pedestrian bridge is currently in the early stages of design for this location. MassDOT is overseeing the design and it is anticipated that 25 percent design plans will be prepared by late 2011 or early 2012.

Promotional Projects to Encourage Traveling by Bicycling

In addition to the bicycle facilities that have been completed or planned during the past few years, a number of promotional programs have been implemented to educate the public about the existing facilities and encourage people to bicycle instead of drive.



Filming of the “Enjoy the Ride: Share the Road in the Connecticut River Valley” Video (photo credit: Kathleen Miller Photography)

Development of Video, Audio and Internet Promotional Materials

The FRCOG worked in conjunction with the Pioneer Valley Planning Commission (PVPC) with funding provided through the Fiscal Year 2002 Transportation Demand Management Program (TDM) called *Share the Road in the Connecticut River Valley: An Infrastructure Improvement Project and Campaign to Promote Traveling by Bicycle* to develop promotional materials to encourage traveling by bicycle instead of by car. The goal of the project was to increase accessibility and awareness for commuting by bike in Franklin, Hampshire, and Hampden Counties. The project included the development of video, radio, and

internet-based media/publicity tools. These media tools were shared with PVPC and made available throughout the Connecticut River Valley.

There is interest in developing a map for the tri-state (Massachusetts, New Hampshire and Vermont) area of the Connecticut River Scenic Farm Byway. The intention is for the regional planning agencies to work together to develop and print a bicycle facility map and other tourist-oriented bicycling information for the tri-state area of the Connecticut River Scenic Byway. This map and materials will highlight the bicycling resources in the greater byway area and the wealth of off-road and shared roadway bicycling facilities. The intent is to provide byway travelers and community residents with a greater knowledge of the bicycling resources that exist in this area. There are many bicycle facilities that are located within reasonable bicycling distance; however, at this time there is no coordinated map that provides information on these resources.

Bicycle Parking

The *Share the Road in the Connecticut River Valley* project also included funds to purchase bicycle parking racks which were distributed to the towns in Franklin County. Twenty-two of the twenty-six towns in the county accepted the bicycle racks for installation at public facilities. The bicycle racks were purchased and distributed during the Fall of 2005.

Franklin County Bikeway Maps

In June 2008, the FRCOG released an official map of the Franklin County Bikeway network. The map highlights the original Franklin County Bikeway routes (both off-road bike paths and shared roadway sections), the services along the way, and other information that may be helpful to cyclists. This map includes the network of approximately 39 miles of shared roadway and 5 miles of off-road facilities designed to provide alternative transportation connections to many destinations throughout Franklin County and the adjoining regions. The maps were available at a number of locations in Franklin County including the Chambers

of Commerce, Visitor Centers, local bike shops, or by request from the FRCOG Planning Office.

In November 2009, the FRCOG released an update of the *Franklin County Bikeway Map* and three new bicycling maps for Franklin County. The three new maps, *Western Franklin County Bikeway Routes* map, the *Central Franklin County Bikeway Routes* map, and the *Eastern Franklin County Bikeway Routes* map, highlight routes that are good for bicycling within the respective areas of Franklin County. The routes highlighted on the maps were identified during the process of updating the *Franklin County Bikeway Plan (2009)*. The maps show loops as well as point-to-point routes that access many of the town centers throughout the county. The maps classify each route as novice, intermediate, or advanced in order to help prospective bicyclists to determine the most suitable route to ride given their ability and physical fitness level. The maps also include information on the services that are available along the routes, and other information that may be helpful to cyclists, such as locations to get water and elevation changes along the various routes.

All four of the maps were made available at the Chamber of Commerce, Visitor Center, local bike shops, or upon request from the FRCOG Planning Office. In addition to the paper maps, low resolution versions of the maps were made available on the FRCOG's website (www.frcog.org). These maps are intended for viewing on-line but are generally not of a high enough resolution for printing.

Bikes on Buses

All Franklin Regional Transit Authority (FRTA) and Pioneer Valley Transit Authority (PVRTA) buses that operate in Franklin County are equipped to carry bicycles. This allows the opportunity for a commuter to travel a portion of their trip by bus and a portion by bicycle. Future public transportation system expansions, as well as the future development of commuter rail services through the region, should consider the

feasibility of allowing bicycles in order to encourage the use of bicycles as a viable form of transportation.

Public Input Received During the Regional Transportation Planning Process

During the public outreach meetings for the update to this Regional Transportation Plan a number of comments were received that related to bicycle facility improvements. The comments included:

- In Sunderland, consider the development of a bike lane on Route 47.
- In Bernardston, Route 5/10 is heavily used by bicycle traffic, but it is currently not wide enough to safely accommodate bicycles due to the high volumes of vehicular traffic. There was an inquiry as to whether it would be possible to use the railroad right of way from the town line to the Creamee to travel to River Street.
- In Whately, it was suggested to use Haydenville Road to link to the bicycle routes in Hampshire County.
- Passenger rail will be coming to Franklin County in the near future with a stop in Greenfield. It was recommended that FRCOG advocate for on-board bicycle accommodation on the trains.

A transportation facility survey was completed as

- part of the Regional Transportation Plan development. The second most frequent comments received overall were those suggesting the establishment of more bike routes. Specific comments received related to the following:
- Better bike route between Greenfield and Northampton;
 - More "Share the Road" signs;
 - Bike routes into VT, NH, MA (tri-state area);
 - More bike racks on buses; and
 - More off-road bike paths.

During the public participation process for the development of the *Franklin County Bikeway Plan Update* a few needed improvements to the Franklin County Bikeway were identified. These improvements include:

- Installing bathroom facilities along various parts of the Bikeway;
- Installing more parking facilities along key points of the Bikeway; and
- Increasing maintenance of the routes during the winter such as plowing (this primarily applied to the shared roadway portions).

Pedestrian Facilities Planning Efforts

Statewide Planning Efforts

2006 Massachusetts Highway Department Project Development and Design Guide

As previously stated, the concept of complete streets which is prescribed in the *2006 MassDOT Design Guide* (also called the *Design Guide*) refers to roadways that are designed to accommodate all users, including pedestrians. The *Design Guide* states that, “once the purpose and need for a project is defined, the designer should determine the most appropriate way to provide safe, convenient, and comfortable accommodation for all users within the context of the project.” Options for pedestrian accommodation include sidewalks, shoulder use and shared lanes, and off-road or shared paths as appropriate for the needs and existing conditions. The *Design Guide* suggests that designers consider geometric features that improve the pedestrian environment such as crossing islands, curb extensions, and other traffic calming features. Pedestrian accommodation should be consistent with the project context, including current or anticipated development density, roadway characteristics, right-of-way dimensions and availability, and community plans.

Franklin Regional Planning Efforts

Franklin Regional Pedestrian Plan

During 2010, FRCOG completed a *Franklin Regional Pedestrian Plan*. Pedestrian-related transportation needs and issues had routinely been discussed in planning documents, but this is the first regional pedestrian plan to be completed as an independent document. The *Franklin Regional Pedestrian Plan* is a comprehensive document that includes a

summary of previously compiled information on pedestrian facilities and issues, as well as, the results of an updated survey of local communities regarding their needs. The goal of the plan is to provide a comprehensive resource for planning and implementing pedestrian-related improvements so that Franklin County communities are more livable. It is also intended that the plan be updated on a regular basis. The specific goals of the *Regional Pedestrian Plan* are to:

- Encourage and promote walking as a viable mode of transportation.
- Improve safety for pedestrians in the region.
- Enhance connectivity between residential areas, village centers, commercial centers, schools, recreation areas, and other destinations.
- Identify gaps in the pedestrian network.
- Identify pedestrian-related infrastructure improvements projects that could be incorporated into future related projects.
- Identify resources for maintaining and repairing existing pedestrian infrastructure, and provide towns with information on implementing pedestrian improvements projects.
- Encourage walking as a recreational activity.
- Educate the public about the benefits of walking and encourage programs that promote walking.
- Identify walking routes that connect destinations and that could promote recreation and tourism in the region.
- Promote a regional multimodal transportation system by safely facilitating pedestrian connections with other modes of transportation including transit, biking, and driving.
- Identify candidate schools for inclusion in the Safe Routes to School Program.

An important part of the *Franklin Regional Pedestrian Plan* was looking at connectivity within the towns and the region in order to identify locations where walking is a viable transportation alternative. In order to determine locations within the region where walking could be considered viable, FRCOG completed a survey about facilities and needs in all of the towns. The results of the surveys were compiled into a Summary Page for

each town and contains information on existing conditions and current needs.

The connectivity and pedestrian issues at schools and senior centers were also reviewed in the *Plan*. The results of this review led to a more in-depth analysis of the facilities for nine focus areas. Specific recommendations were proposed for these focus areas and are described in the following sections.

Existing Pedestrian Facilities

In many cases, the sidewalks and streets that exist in the communities of Franklin County were laid out hundreds of years ago. Downtown Greenfield, Orange, Millers Falls, Turners Falls, Deerfield, Shelburne Falls, Northfield, the Sunderland Village Center, and Montague Center are all examples of historic town centers that were laid out in a manner that is pedestrian friendly. While these town centers are very amenable to walking, the infrastructure in these locations has required updating to adjust to modern transportation demands. In other instances, activity centers have developed in areas that were previously not conducive to walking and improvements are required for them to function safely and effectively for pedestrian activity. Funding is needed to pay for updated infrastructure that better accommodates the modern demands and to retrofit areas that are not presently conducive to walking. Opportunities to provide sidewalks, pedestrian level lighting, safe crosswalks, and connections to shops, services, and residences are pursued whenever possible and appropriate.

Recently Completed Pedestrian Improvements

The following sidewalk and streetscape areas are examples of areas that have been updated recently to include pedestrian facilities improvements.

Greenfield Intersection Improvements

During 2010, intersection improvements were completed in downtown Greenfield at the intersections of Silver and Federal Streets; Silver and High Streets; and Main Street and Bank Row/Federal Street. These improvements included upgrading the traffic signals including pedestrian

crossing phases, sidewalk reconstruction, cross-walk reconstruction, and ADA compliant curb-cuts.



Pedestrian improvements completed at the intersection of Silver and Federal Streets in Greenfield

Sidewalk and Streetscape Improvements in Shelburne Falls in Buckland

Sidewalk and streetscape improvements were completed on Conway Street in the Buckland section of Shelburne Falls. The improvements included the installation of pedestrian level lighting and other streetscape elements. Benches and trash receptacles appropriate to the historical character of the village were provided. The improvements matched those made in other areas of the village in order to create a cohesive image for the entire downtown.

Sunderland Route 116 Sidewalk and Crosswalk Improvements

Route 116 in Sunderland is an area of heavy traffic and pedestrian volumes that has been of concern regarding pedestrian safety over the last several years. Numerous corrective actions have been taken during the past six years in order to improve the visibility of pedestrians to automobile operators. These include the installation of a traffic signal, improved crosswalk markings, in-pavement warning lights, flashing yellow pedestrian roadside beacons at the crosswalks, "Tyregrip" high friction surfacing system to act a lane marking and/or median, relocated bus stops, improved lighting, new sidewalks, and protected left turn lanes. The improvements that were completed are further detailed in the FRCOG *Evaluation and Monitoring of*

Safety Improvement Sites (October 2009) and in Chapter 13, Transportation Safety, of this RTP. The Town, MassDOT, and the FRCOG continue to monitor this high volume location.

Northfield Main Street Historic Restoration Project

During 2009 and 2010, sidewalks and streetscape improvements were constructed along Route 10/63 (Main Street) in the Town of Northfield. The project begins approximately 250 feet south of the intersection of Lorita Lane and Main Street and terminates at the intersection of Moody Street and Main Street. The total length of the project is 9,600 feet or 1.77 miles. Besides the reconstruction of sidewalks, the work also includes: improving safety at the Parker Avenue intersection, repairing sidewalks on several adjacent roadways, restoring the town common, enhancing surrounding areas, and addressing traffic and pedestrian safety concerns. The project incorporates sidewalk and streetscape elements to restore historic town character.

Mahican-Mohawk Trail

The Mahican-Mohawk Trail is a walking trail that follows the route along the Deerfield River corridor which Native Americans, and later early American settlers, used to cross between the Connecticut and Hudson River Valleys. Previously, Transportation Enhancements funding was used to reopen a 10-mile section of the trail along the Deerfield River that connects from Deerfield to Shelburne, and to conduct preliminary planning to extend the trail 100 miles to the Hudson River. During 2009, a bridge was constructed over the South River in the Town of Conway, two miles from the eastern end of the trail. The Deerfield River Watershed Association (DRWA) worked to advocate for the design and construction of this important trail link. The bridge was installed with a large portion of the construction funding from TransCanada Hydro Northeast Power Company - the owner of the land. The Massachusetts Department of Conservation and Recreation (DCR) holds a conservation restriction on the property, which ensures that it will be permanently protected for public use.



A view of the new pedestrian bridge that was installed over the South River on the Mahican-Mohawk Trail in Conway (photo credit: Whitty Sanford)

Existing Advocacy Programs and Promotional Campaigns

Walk Franklin County – for the health of it!

The FRCOG partnered with the YMCA in Greenfield, Baystate Franklin Medical Center, Greenfield Community College, and the Franklin County Chamber of Commerce to develop and launch *Walk Franklin County – for the Health of It!* This cooperative program works to promote walking for transportation, reduction of air pollution, and physical fitness and health. The *Walk Franklin County – for the Health of It!* project is a free program that allows participants to measure and record their walking progress and receive rewards for reaching their walking goals. The FRCOG has completed sets of walking maps for each town in Franklin County. The maps are pocket-sized for easy transport and are available at the YMCA in Greenfield, Franklin County Chamber of Commerce, and other locations throughout Franklin County. Downloadable maps are also available at <http://www.ymcaingreenfield.org/>.

Future Pedestrian Projects

The FRCOG recognizes that there are challenges to planning for walkable communities within a rural region. The distance that individuals who live in Franklin County must travel to work or to run errands can make walking an impractical and

inefficient transportation option under many circumstances. The topography of Franklin County also varies greatly - in some areas, walking can be physically challenging because of steep slopes.

In rural areas like Franklin County, walking along scenic country roads is considered by many residents to be one of the advantages of living in a less developed area. Therefore, while ensuring pedestrian safety is important, it is also critical to do so in a manner that does not alter the characteristics that make it enjoyable in the first place. Due to the low volume and low speed of vehicles on many rural roads, walking safely along the roadway edge is possible. Roadway improvements such as widening, shoulder paving, or adding curbing are not necessary or desirable in these circumstances. On roadways with a heavier volume of traffic the vehicular counts, composition, and speed should be considered when determining pedestrian safety improvements and how they will fit into the area's landscape and character. If measures such as shoulders, curbs, or guardrails for separation seem to be appropriate, every effort should be made to use alternative materials and designs that blend into the area. Such examples may include granite curbs rather than concrete, steel-backed timber guard rails rather than steel, and narrow or grass shoulders that provide a walking area without creating the appearance a significantly wider road.

There are several pedestrian infrastructure projects in the region that are currently being constructed, in final design or have already received funding for design. The following are brief descriptions of these longstanding projects.

Buckland State Street Reconstruction Project

State Street in Buckland will be reconstructed starting in the Spring of 2011. The project includes sidewalk reconstruction and new sidewalks where needed. The project extends from Clement Street to Route 2 - a distance of 4,000 feet. The existing sidewalk on the west side of State Street, which varies from 2.5 feet to 4 feet, wide will be replaced by a 5 feet wide sidewalk. Curbing in the project area will be reset or replaced with granite.

Crosswalks throughout the project area will be reconstructed to ADA (American's With Disabilities Act) compliance. New pavement markings will be applied and signs will be updated. Bump outs will be added in the village. The plans include pedestrian-oriented improvements at the intersections of State Street and North Street, and State Street, and Old State Street.

Charlemont Village Center Pedestrian Facility Improvements

The Town of Charlemont is interested in implementing traffic calming measures on Route 2 (Main Street) through Charlemont Center. The intention is for the traffic calming/pedestrian safety improvements to be part of a larger Route 2 reconstruction project. This phase of the project, currently being designed by MassDOT, is planned for construction in 2013. The 0.9 mile project begins approximately 600 feet west of where Route 8A crosses the Deerfield River and ends just east of South Street. Traffic calming measures currently under consideration for the village center could include colored shoulder treatments, sidewalk and crosswalk enhancements, gateway treatments, improved signage, landscaping, and improved bicycle accommodation.

Ervingside Streetscape Improvements

The Ervingside Streetscape Improvement Project has been awarded funding to complete the design and construction of sidewalk and streetscape improvements along the Connecticut River Scenic Farm Byway (Route 63) in Erving. The project is intended to improve pedestrian access and safety on a one mile section of Route 63 in Erving. The project area spans from the bridge over the Millers River on Bridge Street (at the Erving/Montague town border) to just north of the Erving Elementary School (also the proposed site of a Senior Center). The project area includes the Erving section of Millers Falls and the adjacent residential neighborhood known as Ervingside. Comprehensive plans for sidewalk and streetscape elements will be developed as part of the project. The improvements will link the previously completed Millers Falls Streetscape improvements with residential neighborhoods, the Erving Library,

Veterans Memorial Park, the Erving Elementary School, and the business that are located along Route 63 in Erving. The improvements to be considered for inclusion in the project are pedestrian level lighting, landscaping elements, signs, benches, trash cans, other street furniture and fencing.

Greenfield City-Wide Sidewalk Improvements

The City of Greenfield has prioritized a number of pedestrian improvements throughout the city. Federal Street is an ongoing project, and intersection improvements are currently being completed. During 2010, a number of sidewalk repaving or reconstruction projects were completed citywide including: Hope Street, Pond Street, East Cleveland Street, Conway Street from Allen Street to Silver Street, Lincoln Street, Walnut Street, Russell Street, James Street, Prospect Street, Quincy Street, Holly Avenue, and Haywood Street. In addition, proposed future sidewalk improvement projects include Beacon Street, Pierce Street, Silver Street, Columbus Avenue, Wells Street, and Washington Street.

Phase II of the Northfield Streetscape and Safety Improvements

Phase II of the Northfield Main Street Improvement Project involves intersection and pedestrian safety improvements on Main Street (Routes 10/63) in the Town of Northfield. The work will include replacement of raised medians and relocation of flashing traffic signals; various crosswalk upgrades; new sidewalk construction; and other incidental work. The length of the project is approximately 2.65 miles, beginning at the intersection of Route 10 and 63 and extending to Moody Street. The project is currently in the preliminary design stage and is slated for construction in 2012.

South Deerfield Streetscape Improvements

South Deerfield center is a historically pedestrian friendly area. A number of streetscape design elements have been considered conceptually for further pedestrian enhancements. In 2001, a review of the implementation of possible traffic calming techniques within the South Deerfield center was completed by the FRCOG. Several conceptual

designs were developed after discussions with town officials, residents, and business owners. Recently, there has been a renewed interest in completing streetscape enhancements in South Deerfield center. Funding has been secured to develop design plans and guidelines under a HUD Sustainable Communities grant. These plans will be completed by 2014.

Promoting Safety While Walking

There may be other opportunities to work with towns and public safety officials to promote safe walking practices. During the development of the *Franklin Regional Pedestrian Plan*, a situation on Route 116 in the Town of Sunderland was described where jaywalking is a common occurrence at an area of dense college housing and commercial activities. A town official expressed concern over the minimal fine (a \$1 penalty) that is allowed by State law for ticketing jaywalkers on the state highway. At this location, there are newly installed crosswalks and safety features which are intended to improve the safety for those crossing the street. It would be helpful for the police to have the option of imposing a fine that would discourage individuals from jaywalking. Interest was also expressed in mounting an educational campaign to encourage safe pedestrian practices in this area of concern.

Ongoing Activities with both Bicycle and Pedestrian Components

There are a number of federal and state programs that provide funding to encourage walking and bicycling instead of driving. The programs, projects and activities listed below focus strongly on both bicycle and pedestrian transportation facilities. There are some opportunities in Franklin County to become involved and take advantage of these programs to promote walking and bicycling.

Safe Routes to School Program

As a part of the SAFETEA-LU federal transportation legislation, a Safe Routes to School Program was created. The program is intended to: (a) enable and encourage children, including those with disabilities, to walk and bicycle to school; (b) make

walking and bicycling to school safe and more appealing; (c) to facilitate the planning, development, and implementation of projects that will improve safety; and (d) to reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

In Massachusetts, the Safe Routes to School Program is coordinated through MassRIDES, a statewide program to promote transportation options for commuters, employers, students, and others. Safe Routes to School includes two main components. The first component involves MassRIDES partnering with individual schools by providing technical support and assistance in carrying out activities to encourage walking and bicycling to school. The second component of the program involves the identification and construction of potential infrastructure improvements to encourage bicycling and walking to the partnered schools. At this stage, a consultant is hired to implement and construct the improvements. The program funds infrastructure-related planning, design, and construction projects that will improve the ability of students to walk and bicycle to school. Eligible projects include: sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle, and pedestrian facilities, secure bike parking, and traffic diversion improvements. Such projects may be carried out on any public road or any bicycle or pedestrian pathway or trail in the vicinity of schools (within approximately 2 miles).

The program works with the specific needs of each school and provides tailored services. It is currently only offered to elementary and middle schools. Interested schools must apply directly to the program to receive services. The fee for partnering with the program varies depending on the funding level of that school. Some schools can be eligible for free services. The funding for engineering improvements is limited and a consulting engineering firm makes the decision regarding which schools should receive improvements.

As part of the *Franklin Regional Pedestrian Plan*, a survey of the schools within the region was completed in order to determine if there are schools that would be good matches with the program. These schools were chosen because there were already children walking to school; the location of the school in relation to residential areas made walking a viable option; and/or school officials expressed an interest in the program. The following schools are recommended as good candidate schools:

- Bernardston Elementary School, Bernardston
- Mohawk Trail Regional Middle School, Buckland
- Colrain Central School, Colrain
- Deerfield Elementary School, Deerfield
- Four Corners School, Greenfield
- Federal Street School, Greenfield
- Newton Street School, Greenfield
- Greenfield Middle School, Greenfield
- Leverett Elementary School, Leverett
- Sheffield Elementary School, Montague
- Dexter Park School, Orange
- Butterfield Elementary School, Orange
- Shelburne-Buckland Elementary School, Shelburne

Transportation Enhancements Program

The Transportation Enhancements Program funds non-traditional transportation-related projects such as bikeways and pedestrian improvements. In Franklin County, the majority of past Transportation Enhancement projects that have been implemented were either bicycle or pedestrian/streetscape improvements. In recent years, the Transportation Enhancements Program has been in transition and it was recently streamlined and improved. As a result, there is a renewed interest in the program and opportunities to put new projects forward in the coming years. Bicycling and pedestrian projects are an especially high priority for the Massachusetts Transportation Enhancements program.

A potential project that would fit well with this program is the construction of a sidewalk to Mohawk Trail Regional High School & Middle School along Route 112 and North Street in the Town of Buckland. Currently, students walk along the shoulder of these busy streets to school. Route

112 is a state highway with high speeds (45mph) traffic volumes, and narrow shoulders.

National and International Walking and Bicycling Events

There are a number of well established national and international walking events that provide a framework and schedule for planning events to encourage walking. International Walk to School Day (held in October) and Walk to Work Day (held in May) are events organized to promote walking and bicycling for transportation. There is information on the internet about both of these annual events and suggestions for organizing local activities. International Walk to School Day has been occurring in communities around the United States since 1997. The website www.walktoschool.org provides information and an opportunity to register a local Walk to School event. Walk to School events are a way for schools and communities to build enthusiasm for walking to school, promote the benefits of walking and bicycling, and bring visibility to any safety concerns.

Mass in Motion Program

Massachusetts has also launched a program called Mass in Motion aimed at promoting wellness and preventing obesity with a focus on the importance of healthy eating and physical activity. Mass in Motion features a multi-faceted approach that includes regulations to promote healthy eating and physical activity, grants to cities and towns to make wellness initiatives a priority, and a new website, <http://www.mass.gov/massinmotion/>, to give Massachusetts' residents tips on how to integrate healthy eating and physical activity into their daily lives. Towns interested in promoting walking for transportation and fitness could find assistance and resources through this program.

Ongoing FRCOG Technical Assistance to Towns

The FRCOG provides technical assistance to towns interested in implementing bicycle and pedestrian facilities. The FRCOG will provide technical information about design standards or funding opportunities that allow towns to secure money to plan and construct projects. It is very important that

towns initiate and advocate for bicycle and pedestrian facilities in their communities, and then use their Metropolitan Planning Organization (MPO) as a technical resource.

Future Plans

During the past five years, progress has been made to improve bicycle and pedestrian facilities in Franklin County. As a result, the county is more livable for its residents. The FRCOG has demonstrated its strong support for the development of these alternative modes of transportation through the prioritization of the construction of infrastructure improvements, as well as the implementation of promotional programs. The next steps are to continue these efforts by building on the systems that are in place. The *Franklin County Bikeway Plan Update (2009)* and the *Franklin Regional Pedestrian Plan (2010)* outline initiatives to build on the groundwork that has already been laid. The FRCOG will continue to provide technical assistance to towns pursuing new facilities and improvements and applying for funding to do so. This continued commitment to bicycle and pedestrian infrastructure improvements also support the national and state level commitments to green and sustainable transportation initiatives. Through these efforts, the livability of Franklin County communities is strengthened and improved.

Bicycle Planning

In terms of bicycle planning, the FRCOG is committed to the continued development of a region-wide bikeway network. The next stage is the installation of bikeway logo signs along shared roadway routes that were identified in the *Franklin County Bikeway Plan Update (2009)*. These routes are region-wide, connect to routes outside of Franklin County, and are outlined on the Franklin County Bikeway Maps that were published and distributed during 2010.

In addition, some preliminary conceptual design work is already underway for new off-road trails or bicycle path facilities. The Millers River Greenway and the Erving/Wendell Trail need to be further developed. The development of preliminary design

plans is the next step in evaluating the feasibility of bringing these projects to construction. The construction of a bicycle/pedestrian bridge on Greenfield Road in Montague at the location where the former bridge over the railroad line existed is also a priority. Although this project is currently in design, there may be additional resources needed to see this project to construction.

Pedestrian Planning

Opportunities exist throughout Franklin County for improving and expanding current pedestrian facilities. The *Franklin Regional Pedestrian Plan* (2010) contains a number of specific pedestrian infrastructure improvements. It outlines town-specific pedestrian improvement project in the Town Summary Pages section. In addition, nine focus areas were identified and analyzed. Within these areas, specific recommendations were identified for implementation. The *Regional Pedestrian Plan* also recommends a number of schools within the region that would be good candidates for enrollment in the Safe Routes to School Program. The further promotion and provision of assistance to the local towns in becoming involved and active in this program is also a recommendation.

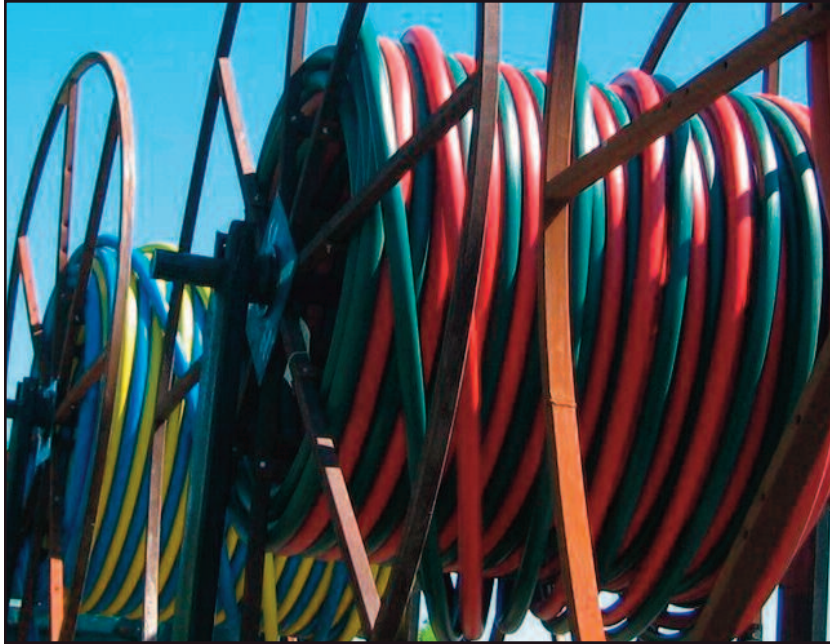
Recommendations for Bicycle and Pedestrian Facilities

- Oversee the implementation and installation of additional **Franklin County Bikeway Logo signs**, on the newly identified segments of the Franklin County Bikeway as outlined in the *Franklin County Bikeway Plan Update* (2009).
- Update and distribute **Franklin County Bikeway Maps** to help promote bicycling in Franklin County.
- Further identify and evaluate the viability of **potential extensions of the Franklin County Bikeway** and potential connections to other bicycle trails and paths in the greater regional area.
- Pursue funding to complete the **design work for the Millers River Greenway** in Orange and Athol.
- Pursue funding to complete the **design work for the Erving-Wendell Bike Path**.
- As opportunities arise, continue to **improve appropriate roads for bicycle use**.
- Continue to work with the Pioneer Valley Planning Commission to distribute the video and other media/publicity tools that were developed through the ***Share the Road in the Connecticut River Valley*** project to promote the use of bicycles for transportation in Franklin, Hampden, and Hampshire Counties.
- Work with partner regional planning agencies to create a **bicycle map for the tri-state** (Massachusetts, New Hampshire, and Vermont) area of the Connecticut River Scenic Farm Byway.
- Continue to provide technical assistance, as needed and requested by individual towns, for **pedestrian improvement projects**.
- Advocate for needed **pedestrian facilities improvements** and funding opportunities.
- Include **pedestrian infrastructure improvements** when appropriate into the scope of road construction projects.
- Work to complete pedestrian infrastructure improvement projects that **enhance safety for pedestrians** including: crosswalk installation and upgrades, safe separation of walkers and vehicle traffic, installation and improvement of curb-cuts, and installation of pedestrian warning signs.
- Follow-up on the findings and recommendations of the ***Franklin Regional Pedestrian Plan*** by prioritizing and advocating for needed pedestrian facilities improvements.
- **Implement improvements** identified in the focus areas analysis section of the *Franklin Regional Pedestrian Plan* (2010).
- Assist towns to secure funding, as appropriate and as available, for **pedestrian**

improvement projects and particularly those identified as needs and priorities in the town summary section of the *Franklin Regional Pedestrian Plan (2010)*.

encourage their patrons to walk instead of driving when feasible.

- Advance participation of Franklin County schools in the Massachusetts **Safe Routes to School Program**. In particular, encourage and assist the schools that were identified in the *Franklin Regional Pedestrian Plan* as good candidates for the program to complete the steps necessary to enroll and become active in the program.
- Work to **improve pedestrian network** by filling in the gaps where sidewalks and crosswalks are needed. In particular, **construct a sidewalk to Mohawk Trail Regional High School & Middle School** along Route 112 and North Street.
- Prioritize needed improvement to meet compliance with the **Americans with Disabilities Act (ADA)** regarding pedestrian facilities and work to correct deficiencies.
- Identify **best practices** for maintenance and/or installation of sidewalks, crosswalks, and pedestrian-related signs.
- Implement **traffic calming measures** and locations where it would be effective to help reduce vehicle speeds in areas of pedestrian activity as appropriate and effective.
- Research the issue of the insignificant (\$1) **fine imposed for jaywalking** on the state highway and the possibility of updating the fee structure to allow towns to punish for poor pedestrian practices.
- Develop and implement a campaign to **educate the public about safe pedestrian practices**.
- Encourage employers to institute programs to **promote walking** by their employees.
- Explore ideas and opportunities to work with **local downtown businesses** to



ITS and Telecommunications

11 Intelligent Transportation Systems (ITS) and Telecommunications

This chapter provides information on projects that are being planned or implemented in Franklin County that utilize technology to improve transportation networks and service delivery. These types of programs are aimed at reducing congestion, enhancing efficiency and improving safety by employing the use of technologically advanced structures, and they are commonly referred to as Intelligent Transportation Systems (ITS). With the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, Congress established a new era for transportation, calling for more efficient and safe use of existing highway and transit infrastructure and emphasizing the seamless integration of multiple transportation modes. Title VI of ISTEA established the Intelligent Vehicle-Highway Systems Program, which was later renamed the Intelligent Transportation Systems (ITS) Program, and the program was further developed as a component of TEA-21 and SAFETEA-LU. The ITS program prescribed the "widespread implementation of intelligent (transportation) systems to enhance the capacity, efficiency, and safety of the federal-aid highway system and to serve as an alternative to additional physical capacity of the federal-aid highway system."

The ITS provisions in the transportation legislation recognize that surface transportation systems are the ties that link communities and facilitate commerce, connecting residents to work, homes, schools, services, and each other. Intelligent transportation systems offer solutions that respond to the challenges of growing congestion, traffic fatalities, and outdated management systems for freight transport and mass transit. ITS systems are diverse and versatile, combining

telecommunications, computer, and sensing technologies to provide real-time information to both traffic managers and travelers on traffic, weather, navigation, and vehicle diagnostics in order to achieve greater system efficiency, safety, and convenience. ITS systems have the potential to provide vehicles with crash-warning and collision-avoidance capabilities that will dramatically enhance our surface transportation system's safety.

This chapter provides information on ITS projects that are currently being implemented in Franklin County.

Western Massachusetts Regional ITS Architecture

The goal of the Federal ITS program is to implement innovative, technologically advanced and integrated improvements to the transportation infrastructure in order to improve safety, enhance mobility, and reduce congestion. The successful deployment of ITS is dependent on an approach to planning, implementation and operations that stresses collaboration between important stakeholders and transportation operators. An ITS architecture outlines a strategy for coordinated communications and systems, and ensures that new individual ITS projects are developed in this broader, holistic, interconnected context. According to MassDOT, an ITS architecture offers three important benefits to a region: improved interagency coordination, cost savings for transportation operations, and better services to the traveling public. Some examples of ITS projects include electronic tolling that doesn't require drivers to stop and collect toll tickets or pay tolls, variable message signs notifying motorists of construction schedules or traffic delays, weather sensors, traffic cameras, and on-line or mobile phone tracking of bus and train locations.

There are four Regional ITS Architecture areas in the Commonwealth: Western Massachusetts, Central Massachusetts, Metropolitan Boston, and Southeastern Massachusetts including Cape Cod and the Islands. The Western Massachusetts Regional ITS Architecture was originally developed in 2005 with stakeholder and transportation providers and users in the four western counties:

Berkshire, Franklin, Hampshire, and Hampden. This architecture was updated in 2010. It includes participation from over twenty partners that represent: Regional Planning Agencies; Transit Authorities; Municipal/Regional Agencies, Authorities, Commission and Organizations; State Agencies; and Federal Agencies.

The primary goals of the Western Region ITS Architecture implementation plan include: An Event Reporting System (an internet-based tool that serves as a centralized repository for information on events affecting the transportation network); Expansion of the Massachusetts Interagency Video Integration System (expansion of a video sharing and distribution system to allow sharing of real-time video feeds among a larger group of agencies); 511 Travel Information System (a universal phone number to obtain travel information on certain roadways and transit services in the region); and Planning Data Archive (a system for coordinating the planning data archives for the transportation agencies in the region).

The Western Massachusetts Regional ITS Architecture ensures that all transportation stakeholders and providers in the region are committed to making technology investments that are consistent with one another and with the framework. This, in turn, ensures that individual projects not only benefit the intended audience, but are able to communicate with and benefit the greater Western Massachusetts region as a whole. The Regional ITS Architecture is able to adapt to new technologies and will continue to evolve as technology evolves and as new projects are developed and implemented.

Regional Traveler Information Center (RTIC)

The Regional Traveler Information Center is a collaborative venture between the U.S. Department of Transportation, MassDOT, and the University of Massachusetts Amherst (UMass). It is physically housed in a new state-of-the-art facility at UMass. The overall goal of RTIC is to develop and put into operation a fully integrated, sustainable, traveler information system for Western Massachusetts, including Franklin, Hampshire, and Berkshire

Counties, the North Quabbin Portion of Worcester County, and the Springfield area of Hampden County. Its primary goals are to develop, deploy, and maintain an expanded RTIC website that includes real-time traveler information on local roadways, bus locations, congestion and construction, and to support regional economic development initiatives including tourism marketing. The RTIC Advisory Committee includes regional stakeholders, like the FRCOG, in addition to its state and federal partners.



RTIC Webcam Screenshot – Route 116 Deerfield, near Route 5 & 10, facing West

The RTIC website is accessible at <http://masstraveler.com>. MassTraveler provides real-time road and traffic conditions (via a growing number of observation cameras at select locations), public transit information, and a listing of regional arts and events to help plan a trip in or to Western Massachusetts. To assist with its goal of supporting economic development and tourism, RTIC made funds available to the three Western Massachusetts Regional Planning Agencies (BRPC, FRCOG and PVPC) in 2010-11 to write narrative content and gather photos and graphics related to the seven designated Scenic Byways of Western Massachusetts. This information will be used to develop the website component of a larger Western Massachusetts Scenic Byway Promotional Campaign. The Scenic Byway website will be hosted by RTIC and will be coordinated with other MassTraveler information, thus expanding the

information available to both RTIC and Scenic Byway users. It is expected that the development and launch of the Scenic Byway Promotional Campaign will take place during 2011-12.

Intelligent Transportation Systems Applied As Part of Highway Maintenance or Construction

It is becoming more routine to include ITS components into roadway construction projects. For example, Route 2 Safety Improvements constructed over the last few years have included variable message signs and the installation of weather sensors at certain locations. Both technologies are very useful in informing the traveling public about special situations in the areas including road conditions, weather conditions, accidents, construction, or congestion due to seasonal events such as Fall foliage. The continued installation of these types of devices in upcoming projects will further enhance travel safety and mobility in the region, but it should be done in a context sensitive nature on appropriate roadways.

Ridesharing

With the dramatic increase in the price of gasoline during the last few years, many Franklin County residents have had a new or renewed interest in carpooling. At the same time, technological improvements have made the management of database information easier. The Franklin Region has some limitations in successfully implementing a carpool/vanpool program in that our population is both small and dispersed. However, there are several programs and internet-based resources that promote carpooling or "ridesharing" in Franklin County and the wider region. MassRides, an organization funded by MassDOT, provides travel assistance to commuters, employers, students, and other travelers by providing information about transportation alternatives, including: transit, biking, and walking. It also helps employers to establish vanpool or carpool options for employee commutes. Another important rideshare program for Franklin County is run through UMass Amherst, which is a major employer for county residents. There are also several other locally-based internet rideshare resources that attempt to connect ride-seekers with drivers offering rides within the region.

They include: Zipride.com, RideBuzz.org, and Craigslist.org.

Telecommunications Infrastructure Improvements

In many parts of Franklin County, the services available through the current telecommunications infrastructure are inadequate for present day needs. Issues of reliability, affordability, and access are significant obstacles for small and large businesses, educational and health care institutions, and individuals. Broadband telecommunications through the telephone network (such as T1 and Digital Subscriber Lines (DSL) class services) is limited in many areas due to the lack of infrastructure, the quality or capacity of existing infrastructure, and/or the cost of access. For example, technology for DSL services is distance sensitive, which means that the service can travel on the copper wires no further than 15,000 feet (almost 3 miles) from where the equipment is located. Broadband services through the cable television system are widely used and available for both residential and business purposes. However, only half of the 26 Franklin County towns have cable systems, and service is not necessary available throughout the entire community. Some residents and businesses use a satellite broadband connection; however, this technology has limitations.

The issues of quality telephone service, access to broadband services, and advanced infrastructure deployment has been a top priority for the Franklin County and FRCOG for many years. In the late 1990s, efforts on this issue began in Franklin County through a working group of the Comprehensive Economic Development Strategy (CEDS) Committee. From there, the initiative grew to become Franklin Connect in 1999, and then expanded to become Pioneer Valley Connect in 2003. Throughout this process, the Connect partnered with Berkshire Connect, Inc. and the Massachusetts Technology Collaborative (MTC), a quasi-state agency dedicated to fostering the innovation economy. By 2009, the two Connects merged to form WesternMA Connect, Inc., an independent, non-profit organization whose mission is to encourage the creation of more

competitive and robust telecommunications landscape with access to advanced, affordable, and redundant broadband services in Western Massachusetts.

As the technological, regulatory, and economic conditions have evolved, Connect has explored different models to alleviate the broadband access inequity in the region. Through a 2006 joint award from the John Adams Innovation Institute of the MTC, Connect was able to build upon previous work conducted to complete the first broadband availability database, conduct a regional survey of broadband access, implement a test of wireless technologies, and develop a public-private sector model to deploy infrastructure and broadband services into unserved areas.

Broadband service is not a regulated industry by state or federal authorities, like how telephone and cable services are. As a result, broadband service providers cannot be compelled to provide service in areas that are unserved. The Connect determined that in a deregulated environment, the private sector did not have a sufficient return on their investment by traditional industry standards. Without access to significant resources, the public sector also could not fund a sustainable solution. One of the greatest barriers to making a solution work was the lack of a “middle mile”¹ infrastructure that connected unserved areas to the greater global telecommunications network. Based on these findings, Connect developed a hybrid network model employing a sub-regional deployment framework. An evaluation of costs to implement the model utilizing a public-private partnership to ensure affordability and scalability to adapt to evolving technologies was completed.

Based on this model and through Connect advocacy, the Massachusetts Broadband Institute (MBI) and a \$40 million Incentive Fund were established by Governor Deval Patrick and the state

¹ “Middle mile” refers to the backhaul or backbone portion of the telecommunications network, which connects the greater global network to a local access point from which “last mile” internet access is then distributed to the individual home or business.

legislature in 2008. The MBI is a division of MTC with the mission to extend affordable high-speed internet access to all homes, businesses, schools, libraries, medical facilities, government offices and other public places across the Commonwealth. The MBI is guided by a Board of Directors that includes the FRCOG Executive Director. More detailed information about the MBI is available on their website at www.massbroadband.org.

The MBI will construct a fiber-optic, middle mile network throughout western and north central Massachusetts. Using a federal American Recovery and Reinvestment Act (ARRA) award of \$45.4 million plus \$26.2 million of their Incentive Fund, the MBI will deploy over 1,100 miles of fiber optics through 123 municipalities within three years. The first segment of this middle mile network has already been constructed along the I-91 corridor. The I-91 segment was deployed in coordination with the Massachusetts Department of Transportation, and has been cited as a national model for government collaboration to deploy infrastructure.



Installation of ITS Infrastructure along I-91
(Photo credit: Massachusetts Broadband Institute)

The MBI’s middle mile network will have access points to allow “last mile”² service providers to connect to it. The middle mile is a necessary element to allow broadband services to be more

² “Last mile” refers to the segment of the telecommunications network that connects homes and businesses to the middle mile network.

economically and efficiently deployed to individual homes and businesses. Last mile broadband services can be transmitted by a variety of technologies, including fiber optic, copper telephone wire, coaxial cable, and wireless. This middle mile network, and any other long term assets constructed using state or federal funding, will be owned and managed by the MBI. Since the MBI was awarded federal ARRA funds, the network is required to be “open access,” which means that more than one service provider will be allowed access to it. In addition, the MBI has designed their network to connect to many local community anchor institutions (such as hospitals, schools, and police stations).

The MBI is encouraging broadband service providers, network builders, and other interested parties to explore and develop innovative ways to deploy broadband services in the region. The MBI will conduct a formal public procurement process to select partners that will access the middle mile network and deploy last mile broadband services into unserved areas. Since the middle mile network is open access, the last mile service providers that connect to this network may include a variety of entities, such as local ISPs, national telecommunications companies, or community-based groups. For example, a new organization called WiredWest has formed to explore developing an open-access, fiber-to-the-home, last mile network in the region.

The MBI is implementing a strategy that will allow public investment in a middle mile network to change the business model for last mile broadband deployment. The FRCOG continues to work in collaboration with the MBI, WesternMA Connect, and other regional planning agencies to support the swift deployment of the MBI middle mile network.

Recommendations for ITS and Telecommunications

- Continue working to ensure that all new ITS applications and deployments are consistent with the Western Massachusetts **Regional ITS Architecture**.
- Continue working with the partners that developed the Western Massachusetts **Regional ITS Architecture** to ensure that it evolves as necessary.
- Continue working with RTIC to identify locations for additional traffic cameras, weather sensors, and other technology infrastructure to **expand travel information available to the public**.
- Continue collaboration with RTIC and the Western Massachusetts Regional Planning Agencies to develop the **Western Massachusetts Scenic Byway Promotional Campaign**.
- Continue supporting the deployment of variable message signs, as appropriate, and installation of weather sensors to enhance **real time information for the traveling public**.
- Continue supporting efforts to **enhance carpooling options** in the region.
- Continue working with WesternMA Connect, Inc. and the Massachusetts Broadband Institute to support the swift deployment of the **MassBroadband 123 fiber optic network** and related broadband technologies in the region.

12



Transportation and Climate Change

12 Sustainable Transportation and Climate Change

The promotion of energy efficient and sustainable transportation systems is an issue that has increasingly become a priority both regionally and nationally. Higher fuel costs and concerns related to climate change have contributed to a strengthening focus on reducing the personal use of automobiles and also on using new and developing technologies that take advantage of more fuel efficient and cleaner burning vehicles.

Climate change is a result of global warming, which is largely caused by human activities, specifically the production of greenhouse gases (GHG). Greenhouse gas emissions are caused by everyday activities, such as the generation of electricity generation and the operation of motor vehicles. While electricity is the largest contributor (33%) of GHG emissions in the United States, the transportation sector comes in at a close second. The transportation sector is responsible for 27 percent of GHG emissions in the United States and it is projected that transportation will continue to account for more than one-third of Massachusetts' total GHG emissions in 2020. The consequences of climate change are expected to include increased numbers of very hot days, average rainfall, temperature, and more severe storms. These effects will also, in turn, impact the performance of our infrastructure. As a result, these variables must be examined when planning for the future of the transportation system in Franklin County, because the decisions that are made today, "particularly those related to the redesign and retrofitting of existing transportation infrastructure or the location and design of new infrastructure, will affect how

well the system adapts to climate change far into the future."¹

Sustainable transportation and the reduction of GHG's has been a priority for Franklin County and the Franklin County Transportation Planning Organization (FCTPO). This chapter will discuss ongoing and recommended initiatives that encourage sustainable transportation and, therefore, also the mitigation of GHGs in the region. In addition, this chapter will examine ways in which the transportation infrastructure system can be adapted to the changing conditions that climate change will bring to the region.

Guiding Policies, Programs and Plans

The Commonwealth of Massachusetts, FRCOG, and other regional organizations have demonstrated their commitment to reducing GHG emissions. Massachusetts has been one of the more proactive states in the country to address the impacts of GHG emissions on climate change. Within the past few years the following policies and plans have been enacted, which lay the foundation for GHG reductions.

Global Warming Solutions Act

In August 2008, Governor Deval Patrick signed into law the Global Warming Solutions Act, making Massachusetts one of the first states in the nation to move forward with a comprehensive program designed to grow the clean energy economy and address climate change. The Act requires an 80 percent economywide reduction of GHG emissions below 1990 levels by 2050 and also requires the Secretary of Energy and Environmental Affairs to set a GHG emission reduction requirement for 2020 that is 10 to 25 percent below 1990 levels. In the 2010 *Massachusetts Clean Energy and Climate Plan for 2020*, the Secretary set the 2020 GHG limit to 25 percent and has outlined the measures that are needed to meet this reduction. These measures include reductions across a wide range of GHG contributors, including: buildings, electricity supply, transportation, and non-energy related emissions.

¹ Transportation Research Board (TRB). Potential Impacts of Climate Change on U.S. Transportation. TRB Special Report 290. 2008.

In the transportation category, the Plan looks at the following specific actions to be taken over the next 10 years:

- Raise the fuel efficiency of vehicles;
- Increase the amount of renewable fuels used;
- Provide incentives for consumers to purchase more fuel-efficient vehicle models; and
- Create a “Pay as You Drive” (PAYD) Auto Insurance pilot program.

GreenDOT

On June 2, 2010, MassDOT announced that it had launched GreenDOT, a comprehensive environmental responsibility and sustainability initiative that will make MassDOT a national leader in “greening” the state transportation system. GreenDOT will be driven by three primary goals: reduce GHG emissions; promote the healthy transportation options of walking, bicycling, and public transit; and support for smart growth development. The initiative includes GHG reduction targets mandated under the Global Warming Solutions Act.

Documenting GHG-Emissions Reduction for GreenDOT Implementation

MassDOT, using its statewide travel demand model, has provided the Franklin Regional Transportation Planning Organization (TPO) with statewide estimates of CO₂ emissions resulting from the collective list of all recommended projects in all the Massachusetts RTPs combined. Emissions are estimated in the same way as the criteria pollutants (volatile organic compounds, nitrogen oxides, and carbon monoxide) whose emissions are required for the air quality conformity determination (for further description, see Chapter 16). However, the CO₂ emissions shown here are part of an effort separate from the conformity analysis and are not part of those federal standards and reporting requirements.

The Global Warming Solutions Act (GWSA) legislation requires reductions by 2020 and further reductions by 2050, relative to the 1990 baseline. The project mix from this RTP (and all other RTPs)

was modeled for both 2020 and 2035 using an Action (Build) vs. Baseline (No-Build) analysis to determine the CO₂ emissions attributed to the all TPO’s mix of projects and smart-growth land use assumptions. The estimates of the modeled CO₂ emissions are provided below:

Table 12-1: Massachusetts Statewide CO₂ Emissions Estimates (all emissions in tons per summer day)

Year	CO ₂ Action Emissions	CO ₂ Base Emissions	Difference (Action – Base)
2010	101,514.4	101,514.4	n/a
2020	105,747.5	105,856.4	-108.9
2035	115,034.1	115,028.0	6.1

As shown above, collectively, all the projects in the RTPs in the 2020 Action scenario provide a statewide reduction of nearly 109 tons of CO₂ per day compared to the base case. However, the 2035 Action scenario estimates an increase of about 6 tons of CO₂ emissions compared to the base case. It should be noted that this current analysis measures only projects that are included in the travel demand model. Many other types of projects that cannot be accounted for in the model (such as bicycle and pedestrian facilities, shuttle services, intersection improvements, etc.) will be further analyzed for CO₂ reductions in the next Transportation Improvement Program development cycle. This information will be updated and reported at that time.

Working closely with MassDOT, the Franklin Regional TPO will continue to report on its actions to comply with the GWSA and to help meet the GHG reductions targets. As part of this activity, the TPO will provide further public information on the topic and will advocate for steps needed to accomplish the TPO’s and state’s goals for greenhouse gas reductions.

HUD-DOT-EPA Interagency Partnership for Sustainable Communities

In 2010, the U.S. Department of Housing and Urban Development (HUD) announced a notice of funding availability for the Sustainable Communities Planning Grant Program. A top priority of President Obama is to build economically competitive, healthy, opportunity-rich communities. In the 2010 Budget, Congress provided a total of \$150 million to HUD for Sustainable Communities Initiative to improve regional planning efforts that integrate housing and transportation decisions, and increase the capacity to improve land use and zoning. In the Fall of 2010, a consortium, with FRCOG as lead partner, received a \$425,000 grant under this program for Franklin County. One of the tasks to be performed is the creation of a Regional Plan for Sustainable Development. This is a three-year grant and the work will be completed in 2014.

FHWA Livability Initiative

In cooperation with the HUD-DOT-EPA Partnership for Sustainable Communities, the Federal Highway Administration (FHWA) also launched a Livability Initiative to work to continue improving the relationship between infrastructure and community needs, specifically to improve a community's 'livability,' to enhance the environmental sensitivity of roads and bridges and to help states explore multi-modal transportation options. According to the FHWA livability is defined as the following:²

Livability is about tying the quality and location of transportation facilities to broader opportunities such as access to good jobs, affordable housing, quality schools, and safe streets. This includes addressing safety and capacity issues on all roads through better planning and design, maximizing and expanding new technologies such as ITS and the use of quiet pavements, using Travel Demand Management approaches to system planning and operations, etc.

² Federal Highway Administration (FHWA). Livability Initiative. www.fhwa.dot.gov/livability. Last updated 6/10/10.

Part of FRCOG's scope of work for the HUD Sustainable Communities Planning Grant is a task to conduct a "Complete Streets and Downtown Livability Plan" for the Town of Deerfield. This plan will incorporate FHWA's livability principles.

Green Communities

In 2008, Massachusetts created the Green Communities Program which uses funding from auctions of carbon emissions permits under the Regional Greenhouse Gas Initiative to reward communities that achieve Green Communities designation by meeting five clean energy benchmarks:

- Adopting local zoning bylaw or ordinance that allows "as-of-right siting" for renewable and/or alternative energy R & D facilities, manufacturing facilities or generation units;
- Adopting an expedited permitting process related to the as-of-right facilities;
- Establishing a municipal energy use baseline and a program to reduce use by 20 percent within five years;
- Purchasing only fuel-efficient vehicles for municipal use, whenever such vehicles are commercially available and practicable; and
- Requiring all new residential construction over 3,000 square feet and all new commercial and industrial real estate construction to reduce lifecycle energy costs (i.e., adoption of an energy-saving building "stretch code").

In 2010, the FRCOG assisted 18 towns in Franklin County in creating Action Plans that outline the ways in which the towns can meet these energy benchmarks and become designated. At this point in time, three towns in the county are now officially designated as Green Communities and are eligible to receive funding grants.

Pioneer Valley Clean Energy Plan

At a more regional level, the *Pioneer Valley Clean Energy Plan* was developed in 2008 by the FRCOG and PVPC to examine energy use in the Pioneer Valley and identify clean energy goals for the

Pioneer Valley. The resultant four goals for the region consist of the following:

- 1) Reduce our region's energy consumption to 2000 levels by the end of 2009 and reduce that by 15 percent between 2010-2020;
- 2) Site sufficient new capacity to generate 214 million kilowatt hours of clean energy annually in the Pioneer Valley by the end of 2009 and another 440 million kilowatt hours per year by 2020;
- 3) Reduce our region's GHG emissions by 80 percent below year 2000 levels by 2050;
- 4) Create local jobs in the clean energy sector.

The goals identified in that report represent energy use goals for many sectors, including transportation. However, Goals 1 and 3 are directly applicable to the transportation sector in the region. In order to achieve the outlined energy reductions identified in Goal 1, three sectors were targeted, which include: (1) Industry, (2) Buildings, and (3) Transportation. An approximate 30 percent energy use reduction goal was identified for the Pioneer Valley transportation sector. The plan identifies a series of guiding principles for the region to help in achieving the four goals mentioned above. The guiding principles that can be directly related to the transportation sector include the following:

- Reduce energy consumption through conservation and efficiency;
- Promote a comprehensive public transportation system including expansion of bus lines, public rail transportation, shuttles, car sharing, and safe bike routes and sidewalks and pedestrian paths with an emphasis on energy efficiency and use of renewable fuels; and
- Increase urban infill in order to make communities more pedestrian friendly and energy efficient.

Alternative Transportation Plan

In 2009, the FRCOG created the *Alternative Transportation Plan* that examined ways to encourage alternative forms of transportation to Franklin County other than the singly-occupied vehicle. The Plan made a number of recommendations which are summarized here:

- Continue implementation of the 2009 *Franklin County Bikeway Plan Update*,

- Continue implementation of the 2008 *Franklin County Park and Ride Study*;
- Establish a Zipcar within Franklin County;
- Support the current efforts underway to bring passenger rail back to the county and be ready to capitalize on it when it is restored;
- Promote ridesharing efforts;
- Improve bus transit to attract residents wishing to park and ride, and increase the level of service for lower-income people and elderly.

Many of the recommendations in the *Alternative Transportation Plan* are part of ongoing efforts by the FRCOG, FRTA, and other organizations in the region and are described in more detail in the next section.

Current Planning Activities

The FRCOG recognizes the rural nature of the Franklin County region and acknowledges that traveling by automobile is often the most convenient or only option. However, with increases in the cost of fuel and more attention being focused on environmental issues, such as climate change, it is important to discuss options for reducing dependence on the single-occupied vehicle and increasing alternative transportation options whenever possible. The Franklin County region and the FRCOG have been working on bringing sustainable transportation to the area and mitigating GHGs in many ways. This section highlights the many planning activities and programs that have recently been completed or are ongoing in this topic area.

Park and Ride Lots

Park and ride lots provide an opportunity to those who do not live on or within walking distance of public transit routes to travel to an intermediary location and take public transportation or carpool with other commuters. There is currently a park and ride lot on Route 2 in Charlemont which was established by MassDOT in 2002. MassDOT is currently in the process of establishing a park and ride lot in the Town of Whately, which will be easily accessible to Routes 5/10, Route 116, and Interstate 91. The lot can be serviced by both the FRTA and

the PVT bus systems. It is currently under design and \$1.2 million has been earmarked in CMAQ funds for its construction in the 2011 Transportation Improvement Program.



Charlemon MassDOT Park and Ride

In 2008, FRCOG published the *Franklin County Park and Ride Study* which examined the demand for park and ride lots and determined optimal locations for potential sites in the county. The study found that there is a high demand for park and rides and that there are many places throughout the county that are already functioning as informal park and ride lots. Based on this information, the study recommended 14 specific sites that could become park and ride lots. In 2010, two of these sites became official park and ride lots – the Greenfield Visitors Center, located on Rt. 2A, and the Sunderland Historical Society, located on Rt. 47 in Sunderland Center. To date, MassDOT has posted way-finding signs along I-91 directing commuters to the Visitor's Center. However, the entrance to the lot and the actual site still needs to be signed, which MassDOT will do when the weather breaks in the Spring of 2011. The Sunderland park and ride lot has also been officially designated as a park and ride and has been added to MassDOT's map of park and ride lots. Way-finding signs have not yet been posted, but MassDOT has agreed to do so in the Spring of 2011 along Route 116 from I-91 directing commuters to this lot.

Ridesharing

There are several programs and internet-based resources that promote carpooling or "ridesharing" in Franklin County and the wider region. The major

program to encourage ridesharing across Massachusetts is *MassRides*. *MassRides* provides travel assistance to commuters, employers, students, and other travelers by providing information about transportation alternatives, including: transit, biking, and walking. It also helps employers to establish vanpool or carpool options for employee commutes. Another important rideshare program for Franklin County is run through UMass Amherst, which is a major employer for county residents. There are also several other locally-based internet rideshare resources that attempt to connect ride-seekers with drivers offering rides within the region. They include: Zipride.com, RideBuzz.org, and Craigslist.org.

Shared Vehicle Program

Car sharing is defined as the joint access and ownership of a car. For individuals who do not need a car every day, it is a way to have a car when you really need one while relying on alternatives for most trips. Zipcar is a national vehicle sharing program that is available in Massachusetts. This service allows users to pay a fixed rate for the use of a vehicle that they are able to reserve when they need it. Members can reserve cars for time periods ranging from just hours to many days. These reservations include the cost of fuel, insurance, and reserved parking. Presently, the closest Zipcar location can be found on the campus of Amherst College in the Town of Amherst. The Franklin County *Alternative Transportation Plan* examined the possibility of bringing Zipcar to the county. Because this service is run by a private company, there is little that FRCOG can directly do to locate a vehicle in the county. However, Zipcar makes its vehicle-siting decisions based on the interest the company receives on its website. To promote interest in a Zipcar in the county, FRCOG could organize a "Zipcar Drive" to encourage residents to notify Zipcar of their interest.

Promote Walking and Bicycling

There has been a lot of support in Franklin County for increased walking and bicycling. Bicycling and walking play a large role in community livability by impacting the environment, community health and wellness, and the transportation network. Shifting

to these transportation modes can result in a significant decrease in transportation-related GHG emissions, while promoting the health of residents. In Franklin County, several reports and studies have examined the safety and security of the pedestrian and bicyclist transportation network and has sought to increase the quality and quantity of these facilities. The following studies and reports have encouraged bicycling and walking in the county: *Alternative Transportation Plan, Franklin County Bikeway Plan, Franklin County Pedestrian Plan, and Safe Routes to School Preliminary Examination.*



Canalside Trail in Turners Falls, Montague

Increase Use of the Public Transit System

In Franklin County, several reports and studies have examined the demand for public transit in the region. The following studies and reports have focused on transit service and include: *Alternative Transportation Plan, West County Transit Study, Northfield/Bernardston Transit Study, and Regional Transit Center Planning.* The major strength of the transit system is that most of the major commuting routes within Franklin County are currently being served by public transit. Another beneficial aspect of the public transit system is the inclusion of bicycle racks on all of the buses. This coordination between various modes of transportation can help decrease dependence upon the single occupant motor vehicle and help mitigate GHG emissions. On the other hand, these studies found that a

weakness with the current status of transportation options within Franklin County is the limited service of public transit. This is primarily due to the high cost of providing transit service to such a rural population. See Chapter 9: "Transit and Paratransit Services," for recommendations on how to improve the public transit system in Franklin County.

Passenger Rail in the Region

The Knowledge Corridor Passenger Rail Study examined the feasibility of expanding passenger rail to the region by extending service from Springfield, MA to White River Junction, VT while passing through Franklin County. This report included an examination of bringing passenger rail into Greenfield via the new Regional Transit Center being constructed in 2011. The Regional Transit Center will be located directly along a railroad line to allow for the future facilitation of passenger rail to the region. In 2010, federal stimulus funds were awarded to improve this rail line for passenger rail and to construct a passenger platform at the Regional Transit Center. This new service to the region will provide residents with another travel option to the singly-occupied vehicle. See Chapter 7: "Passenger Rail," for more information on bringing passenger rail to the region.

Telecommunications

Telecommuting can help decrease GHG emissions by allowing workers to not have to commute daily to their jobs and instead work from home. It is anticipated that the number of employees telecommuting in Franklin County will continue to increase in the future. This is largely in part due to the recent and pending expansion of the telecommunications infrastructure and high-speed internet services in the region. For more information on this topic, see Chapter 11: "ITS & Telecommunications."

Improve Traffic Operations

Reduce Congestion and Travel Time

The time vehicles spend idling in traffic congestion is a direct contributor to GHG emissions. In order to prevent idling and decrease time spent in traffic, the efficiency of the transportation network needs to be examined. The recent Greenfield Signals

Improvement Project included the redesign of eight signalized intersections in Greenfield. The redesign of these intersections included improvements to pedestrian facilities as well as updated signal timings, which will help improve the efficiency of the transportation network and decrease emissions.

Improve Communication and Notification

Technology can help improve the efficiency of the transportation network through driver communication and advanced notice of incidents to users of the transportation network. Improvements in communication may include better and more frequent use of variable message signs to notify drivers of upcoming construction schedules or delays. Another form of notification is the Massachusetts Travel Advisory System which is a free service provided for the Commonwealth in which a motorist can call 511 to see if a select number of major roadways are experiencing congestion. This service was recently expanded to Interstate 91 and Route 2 in Western Massachusetts. Motorists who are aware of an incident can take an alternate route, which will result in an avoidance of the congestion and a decreased travel time.

Adaption of Transportation Infrastructure to Climate Change

Transportation-related GHG emissions contribute significantly to climate change. In turn, however, climate change will also have an impact on the transportation system. A special report from the Transportation Research Board (TRB), "Potential Impacts of Climate Change on U.S. Transportation," determined that the following impacts on the transportation system can be expected:

- Prolonged hot days lead to increased risk of wildfire;
- Compromised pavement integrity (hotter weather = softer pavement and increased rutting from traffic);
- Deformed rail lines;
- Adversely affected bridge operation due to thermal expansion of bridge joints;
- Increased flooding and inundation of bridges, roads and rail lines; and
- Heavier rainfall will require redesign and replacement of drainage structures.

It is clear that not only does the county need to take an active effort to reduce GHG emissions by promoting sustainable transportation, but it also needs to plan for these potential changes and their impact on transportation infrastructure. The following strategies are aimed at preparing for the impacts of climate change on the future of the transportation system and the incorporation of this concern into planning practices.

Plan for More Severe and Frequent Flooding in the Region

A safe transportation system protects users from hazards, including hazards resulting from climate-related stresses on the system. It is expected that more extreme weather events will lead to more precipitation and flooding. It is critical that infrastructure be planned and maintained to be able to withstand a higher frequency of these events. Furthermore, such events may be more severe in the future, so a revised examination of potential flooding areas and critical infrastructure should be performed for the whole region. The FRCOG has prepared updated flood maps for the county to assess changes in flooded areas as a result of climate change. Additionally, a recent exercise which examined transportation infrastructure and critical facilities in the aftermath of a potential failure of the Harriman Dam (in Vermont) was performed. Such exercises should be standard for all potential dam failures in the county as the threat of these events increases. These exercises will help prepare the region for appropriate transportation / disaster planning. This has recently proved especially important during Hurricane Irene in August 2011, which flooded and washed out many roads and bridges in the region.

Preserve Aspects of the Transportation System that are Threatened by Climate Change

More prolonged heat spells and hotter days are expected with climate change, along with increased precipitation events. These effects will directly impact pavement condition. Warmer days will result in the softening of the pavement for longer periods of time and may lead to more rutting. Additional concerns regarding stormwater runoff should be

examined when updating, maintaining, and redesigning the roadway network to accommodate the potential need for more drainage. To help prepare for the impacts of climate change on the transportation network, FRCOG is currently developing a Pavement Management Program for the region to monitor this critical component of the transportation infrastructure.

Improve Emergency Response Times via an Updated GIS Network

There are several tools which can aid in improving emergency response to an event. Emergency vehicle preemption is one proactive tool that can be used. Another aspect of emergency response is the accuracy of the information emergency responders use to reach an event. The transportation network is dynamic in nature as road conditions and accessibility may change over time. The FRCOG is currently working on identifying potential changes to the Road Inventory File (RIF), which contains information used by emergency responders about the transportation network. An updated RIF will help improve emergency response times.

Recommendations for Transportation and Climate Change

Transportation and climate change are closely related. The transportation sector is the second largest contributor to GHG emissions, which are a primary cause of climate change. In turn, however, changes in weather patterns and extreme weather events have a direct impact on the integrity of the transportation system. In order to help decrease transportation's role in climate change, transportation-related GHG emissions need to be reduced. There are many steps that have already been taken in the region to help mitigate GHG emissions. The region has also taken a proactive role in preparing for the impact of climate change on the regional transportation system. This chapter demonstrates how Franklin County is working towards the state's goal of reducing GHG by 25 percent by the year 2020 as laid forth in the Massachusetts Clean Energy and Climate Plan for 2020.

Recommendations

- Continue to promote a **reduction in GHG emissions** in the region through the mitigation strategies described in the chapter.
- Continue to **promote sustainable and alternative forms of transportation** to the singly-occupied motor vehicle as outlined in the *Alternative Transportation Plan*, the *Franklin County Bikeway Plan*, the *Franklin County Pedestrian Plan* and others mentioned in this chapter.
- Develop local and regional **emergency action plans** for events related to climate change.
- Continue to develop a **Pavement Management System** for the county and work to implement it.

13



Transportation Safety

2012

REGIONAL TRANSPORTATION PLAN

13 Transportation Safety

Transportation safety is a critical component of the region's transportation planning efforts. The safety of the transportation network can strongly impact travel patterns and behaviors as well as the health of a community. Many factors influence the safety of the transportation network including the road environment, road user, and vehicle factors. The congruence of all these factors makes addressing traffic safety a dynamic task. The overall goal for traffic safety is to minimize the consequences or the probability of a vehicle being involved in a hazardous situation.¹ Reducing the frequency and severity of traffic incidents in the county is an ongoing challenge. For Franklin County, this most often results in safety treatments on existing roadways that range from routine maintenance to complete intersection redesign.

The most critical components of a safe, secure, and efficient transportation network are coordination and communication among emergency personnel, law enforcement officers, and the users of the transportation network. There are many challenges associated with the rural nature of Franklin County. Traffic incidents occurring outside of urban areas can be challenging for emergency personnel to respond to in a timely manner and can result in large travel distances between the scene of a crash and a hospital. Additionally, rural areas typically have a lower percentage of seat belt usage and higher travel speeds. Approximately 84 percent of the roadways in Franklin County are rural roads. The remaining 16 percent of roadways are located in

● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
● **Nationally, in 2008** ●
● **alone, more than 37,000** ●
● **people lost their lives in** ●
● **traffic-related incidents** ●
● **and over 2 million people** ●
● **were injured. This is the** ●
● **equivalent of 102 people** ●
● **dying each day, or one** ●
● **life lost every 14** ●
● **minutes.** ●
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

urban clusters, or areas with higher population densities, and experience more traffic, congestion, and different crash characteristics. These urban areas often have specific challenges that typically include a wide range of roadway users and higher traffic volumes.

Guiding Policies and Programs

In 2006, MassDOT created the *Massachusetts Strategic Highway Safety Plan* that examined transportation safety in the Commonwealth from a variety of perspectives. Specifically, it listed six Emphasis Areas in which to focus safety efforts.

They are:

- Data Systems
- Infrastructure
- At-Risk Driver Behavior
- Higher-Risk Transportation System Users
- Public Education and Media
- Safety Program Management

Franklin County's safety efforts align most closely with the Infrastructure and the Higher-Risk Transportation System User Emphasis Areas. These themes examine crash and injury data to determine ways to reduce infrastructure-related (intersection-related and lane departure crashes) and high-risk user (pedestrian and bicyclist accident) issues. As will be detailed in this Chapter, much of the safety-related issues in Franklin County are the result of infrastructure issues and conflicts between motorists and pedestrians/bicyclists.

Background

Traffic incidents have a direct impact on the safety of a community as well as the operations and security of the transportation network. Nationally, in 2008 alone, more than 37,000 people lost their lives in traffic-related incidents and over 2 million people were injured. This is the equivalent of 102 people dying each day, or one life lost every 14 minutes. Fatal traffic crashes were the leading cause of death for persons at every age from 3 to 34.

While these statistics are ghastly, the positive news is that the national fatality rate has declined in recent years and is currently at a historic low at 1.25 per million vehicle miles traveled (VMT) in 2008. Furthermore, Massachusetts had the lowest fatality

¹ Evans, Leonard. Traffic Safety, Science Service Society. Bloomfield Hills, Michigan. 2004.

rate (per million vehicle miles traveled) in the country in 2008. A historical examination of the number of fatalities occurring in Massachusetts

reveals an impressive 58 percent decrease in the number of traffic-related fatalities between 1975 and 2008 and a 76 percent decrease in the rate of fatalities (per 100 million vehicle miles traveled).² The rate of traffic fatalities (per 100 million vehicle miles traveled) for all roads in the state of Massachusetts was 0.67 in 2008. This rate continues to be among the lowest fatality rates in the nation. This rate is slightly higher for rural roads at 0.87, and lower for urban roads at 0.65.³ There are several reasons why the rate may be higher on rural roads which may include higher travel speeds, a typically lower safety belt usage in rural areas, longer distances to emergency care, and longer emergency response times. In fact, it has been estimated that it takes more than twice as long for EMS personnel to arrive at a crash scene in a rural community, as compared to an urban community – 19 minutes versus 7 minutes.⁴ The additional safety challenges associated with rural roads continues to be monitored and addressed throughout the county.

Table 13-1 presents a summary of traffic-related fatalities for each county in Massachusetts, from 2004 to 2009. Franklin County ranks among the lowest (next to Nantucket and Dukes Counties) in the number of traffic-related fatalities per year. Over the six year period from 2004 to 2009, there were a total of 41 traffic-related fatalities in Franklin County. In 2009, Franklin County had one traffic-related fatality, which is a significantly lower number than previous

years. From 2004 to 2009, traffic related fatalities in Franklin County varied, with the number of fatalities peaking at 10 in 2007 and plummeting to one in

Table 13-1. Traffic Related Fatalities in Massachusetts by County, 2005-2009

County	Fatalities						Total
	2004	2005	2006	2007	2008	2009	
Barnstable County	8	24	21	30	17	14	114
Berkshire County	15	15	19	10	14	15	88
Bristol County	28	60	51	52	43	37	271
Dukes County	2	2	2	0	1	1	8
Essex County	24	46	35	40	29	36	210
Franklin County	6	8	9	10	7	1	41
Hampden County	20	43	28	38	29	31	189
Hampshire County	4	12	9	10	8	9	52
Middlesex County	25	69	63	61	56	66	340
Nantucket County	0	0	1	1	0	0	2
Norfolk County	24	31	48	37	27	36	203
Plymouth County	36	46	45	42	48	25	242
Suffolk County	16	26	31	39	29	21	162
Worcester County	44	58	67	64	56	42	331
Massachusetts	440	441	429	434	364	334	

Source: National Highway Traffic Safety Administration, U.S. Department of Transportation. Traffic Safety Facts for Massachusetts: 2005-2009 & 2004-2008. Fatalities (All Crashes).

2009. Across the state a similar trend can be seen with a slight increase in 2007 and declining in 2008 and 2009. The recent decline in traffic related fatalities at both the state and county levels from 2007 to 2009 denotes a positive trend that should continue to be monitored.

The number of traffic-related pedestrian fatalities in Massachusetts also varied over the five year period from 2005 to 2009. In 2005, a total of 76 pedestrians were killed in traffic crashes across the state. This number decreased in 2006 and 2007 with 61 and 66 fatalities, respectively, but rose to 76 fatalities again in 2008. This number dropped significantly, however, in 2009, with 48 traffic-

² National Highway Traffic Safety Administration, Traffic Safety Facts, 2008.

³ National Highway Traffic Safety Administration. Traffic Safety Facts for Massachusetts: 2005-2009.

⁴ National Highway Traffic Safety Administration, Traffic Crashes Take Their Toll on America's Rural Roads, 2006.

related pedestrian fatalities.⁵ While this may indicate a positive change, this trend should continue to be monitored.

Since 2005 the number of deaths of pedalcyclists (bicyclists and other cyclists) has increased for the State of Massachusetts. In 2005, five pedalcyclists were killed in traffic-related crashes and this number rose to 10 in 2008.⁶

Identification of the Most Hazardous Intersections in Franklin County

Approximately every three years the FRCOG conducts an analysis of crash data to determine high crash locations in the county. All crashes resulting in estimated property damage in excess of \$1,000, injuries, or fatalities must be reported to and recorded by local or state police. Those involved in the crash or the investigating police officer must complete a standard report form and forward it to the Massachusetts Registry of Motor Vehicles. Based on these reports, the Registry of Motor Vehicles records each crash in a database. This data is provided to MassDOT, who distributes it to the Regional Planning Agencies.

From 2004 through 2006, 4,097 crashes were recorded in the 26 communities in Franklin County. The majority of these crashes occurred in Greenfield (1,410 crashes), Orange (466), Deerfield (472) and Montague (293). These towns are the most densely developed and/or most trafficked areas of the county. To determine the hazardousness of each intersection, a nationally recognized measure called "Equivalent Property Damage Only" (EPDO) was applied to each crash. EPDO assigns points to each crash based on its severity. There are three crash severity levels: "property damage only" which is assigned one point (1), "injury" which is assigned five points (5) and "fatality" which is assigned ten points (10). Only one point category is assigned to each crash, reflecting the most serious crash level. For example, a crash that involved three cars and

resulted in property damage to all three cars and two injuries would receive an EPDO rating of 5 reflecting the injuries as a result of the crash.

Using the results of the EPDO calculation, the top fifty most hazardous intersections were ranked and the results are contained in Tables 13-2 and 13-3 and shown on a map at the end of Chapter 5 (Roadway and Bridge Infrastructure). The map shows that the vast majority of the identified intersections are located within the most populated and/or most heavily traveled corridors in the county.

The most hazardous intersection in Franklin County in this analysis has been found to be the Greenfield Rotary at Exit 26 of Interstate 91 and Route 2 with a MEV_{EPDO} ⁷ rate of 7.97 and an EPDO total of 241 in 109 crashes. The Greenfield Rotary has constantly been the location where the highest number of crashes has occurred and has been listed in the top 5 of the last three hazardous intersection lists created. For these reasons, the FRCOG staff and MassDOT worked to better understand the safety issues at this location, and in 2008 a project to retrofit the rotary with a new signage and restriping plan was implemented. This work is discussed later in this chapter.

In total, 26 (52%) of the 50 intersections are located in Greenfield, which is by far the most populated and densely developed community in the county. In addition to the Rotary, five other Greenfield intersections are included in the top ten.

Of the 50 most hazardous intersections, 37 appeared on the previous list of the top 50 most hazardous intersection in Franklin County⁸ produced from crash data from 2002 through 2004. Of those 37 intersections, 18 have a MEV_{EPDO} rate higher (marked with "▲" in the tables) than the previous top 50 list and 19 have a MEV_{EPDO} rate lower (marked with "▼" in the tables). These changes in MEV_{EPDO} rate are most likely the result of

⁵ National Highway Traffic Safety Administration, Traffic Safety Facts, Massachusetts, 2005-2009.

⁶ National Highway Traffic Safety Administration, Traffic Safety Facts – (2005, 2006, 2007, 2008), Bicyclists and Other Cyclists.

⁷ MEV = Million Entering Vehicles

⁸ Identification of the Most hazardous Intersections in Franklin County 2002-2004, FRCOG (September 2006)

more information contained in the location descriptions being reported in the RMV database.

It is important to recognize that Franklin County is very rural and the majority of its roadways carry lower traffic volumes than the rest of the state. Therefore, they experience a lower probability of crashes. This means that inclusion of an intersection on the most hazardous intersection list for Franklin County does not necessarily mean that an intersection is experiencing a hazardous crash problem. To see how these intersections on the most hazardous list compare to those intersections statewide, they have been compared to ratings produced by MassDOT.



The intersection of Route 202 at Prescott Road, in Shutesbury (Ranking #9)

Table 13-2: Rank 1 – 25 of the Top Fifty Most Hazardous Intersections in Franklin County, 2004 – 2006

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{Crash} Rate	Type of Control
1	Greenfield	I-91/Route 2 Rotary	109	241	7.97↓	3.61	Yield
2	Greenfield	Conway St./Devens St.	11	27	7.68↓	3.13	Stop
3	Erving	Route 63/Semb Dr./Forest St.	7	19	5.28↓	1.95	Stop
4	Greenfield	Wells St./Allen St.	17	41	5.09↑	2.11	Stop
5	Greenfield	Conway St./Grove St.	7	19	5.03↑	1.85	Stop
6	Whately	Route 5&10/Christian Ln.	10	30	4.85↓	1.62	Stop
7	Greenfield	Colrain Rd./College Dr.	16	44	4.84↑	1.76	Stop
8	Greenfield	Maple St./Mountain Rd.	8	20	4.41	1.76	Stop
9	Shutesbury	Route 202/Prescott Rd.	5	17	3.86↓	1.13	Stop
10	Buckland	Route 2/Route 112 South	8	29	3.65↑	1.37	Stop
11	Montague	Route 63/North Leverett Rd.	11	23	3.42↑	1.63	Stop
12	Deerfield	Route 5&10/North Main St.	14	42	3.41↓	1.14	Stop
13	Orange	South Main St./West Main St.	23	43	3.36↑	1.80	Traffic Signal
14	Greenfield	Leyden Rd./Leyden Woods Ln.	7	15	3.26	1.52	Stop
15	Greenfield	Colrain St./Elm St.	9	21	2.99	1.28	Traffic Signal
16	Greenfield	Federal St./Silver St.	24	60	2.75↑	1.10	Traffic Signal
17	Greenfield	Main St./Federal St.	29	49	2.74↑	1.62	Traffic Signal
18	Greenfield	Conway St./Allen St.	6	18	2.63↓	0.88	Traffic Signal
19	Deerfield	Route 116 (North)/Route 5&10	25	53	2.62↑	1.23	Traffic Signal
20	Orange	Route 122/East Myrtle St.	5	17	2.59	0.76	Stop
21	Greenfield	Route 2/Big Y Plaza Driveway	23	55	2.55↓	1.07	Stop
22	Greenfield	Colrain Rd./Nash's Mill Rd.	7	15	2.54	1.18	Stop
23	Greenfield	Deerfield St./Cheapside St.	12	32	2.15↓	0.81	Stop
24	Greenfield	High St./Beacon St.	6	26	2.14↑	0.49	Stop
25	Greenfield	Route 2A/River St.	18	50	2.13↓	0.77	Traffic Signal

↑ - MEV_{EPDO} Rate higher than seen in the Top 50 Most Hazardous Intersection list (2002-2004 data)

↓ - MEV_{EPDO} Rate lower than seen in the Top 50 Most Hazardous Intersection list (2002-2004 data)

Table 13-3: Rank 26 –50 of the Top Fifty Most Hazardous Intersections in Franklin County, 2004 – 2006

Rank	Town	Intersection	Number of Crashes	EPDO Total	MEV _{EPDO} Rate	MEV _{Crash} Rate	Type of Control
26	Orange	East Main St. [Rt. 2A]/Wheeler Ave.	4	16	2.13	0.53	Stop
27	Whately	Route 116 (South)/Route 5&10	22	46	2.09↑	1.00	Traffic Signal
28	Deerfield	Route 5&10&116/Elm St.	19	43	2.08↑	0.92	Traffic Signal
29	Greenfield	River St./Laurel St.	5	17	2.03	0.60	Stop
30	Montague	Millers Falls Rd./James Ave.	3	15	2.00	0.40	Stop
31	Whately	Route 5&10&116/Neighbors Gas	12	32	1.97	0.74	Stop
32	Gill	Route 2/Main Road	20	32	1.95↑	1.22	Traffic Signal
33	Northfield	Route 10/Gill Center Rd.	5	21	1.94	0.46	Stop
34	Erving	Route 2/Prospect St.	7	19	1.91	0.70	Yield
35	Greenfield	Silver St./Country Club Rd.	8	24	1.90↓	0.63	Stop
36	Orange	East Main St./Water St.	5	17	1.87	0.55	Stop
37	Greenfield	Route 2/Adams Rd.	14	26	1.79↑	0.96	Traffic Signal
38	Orange	South Main St./East River St.	7	15	1.78↓	0.83	Traffic Signal
39	Deerfield	Route 116/River Rd.	11	39	1.78↑	0.50	Stop
40	Greenfield	High St./Maple St.	7	23	1.71↓	0.52	Stop
41	Greenfield	Main St./Conway St.	8	28	1.65↑	0.47	Stop
42	Greenfield	Federal St./Pierce St.	15	23	1.61↑	0.72	Traffic Signal
43	Greenfield	Deerfield St./Meridian St.	10	18	1.60↓	0.89	Traffic Signal
44	Shelburne	Route 2/Colrain-Shelburne Rd.	4	20	1.60↑	0.32	Stop
45	Greenfield	Route 2/Colrain Rd.	26	42	1.50↓	0.93	Traffic Signal
46	Deerfield	Route 116/Sugarloaf Street	11	27	1.33↓	0.54	Traffic Signal
47	Greenfield	Federal St./Pleasant Street	7	19	1.31↓	0.48	Stop
48	Sunderland	Route 116/Route 47	16	28	1.30↑	0.74	Traffic Signal
49	Deerfield	Route 5&10/Keets Rd.	7	15	1.30	0.61	Stop
50	Greenfield	Deerfield St./Bank Row/Mill St.	9	21	1.29↓	0.55	Traffic Signal

↑ - MEV_{EPDO} Rate higher than seen in the Top 50 Most Hazardous Intersection list (2002-2004 data)

↓ - MEV_{EPDO} Rate lower than seen in the Top 50 Most Hazardous Intersection list (2002-2004 data)

Greenfield Rotary Safety Analysis

The Greenfield Rotary is a critical node in the regional transportation network as it connects the Mohawk Trail (Route 2A to the east of the rotary and Route 2 to the west of the rotary) and Interstate 91, thus providing access to all areas of Franklin County. While this particular location faces several challenges, perhaps the most notable is the congruence of many different roadway types including the most heavily traveled roadways in Franklin County – Interstate 91 as well as Route 2. Interstate 91 provides north-south access and is characterized by high volumes and high travel speeds, serving approximately 25,000 vehicles per day. Also a significantly traveled roadway, the Mohawk Trail (Route 2) is an urban principal arterial roadway accommodating nearly 20,000 vehicles per day east of the Rotary, and is classified as a principal arterial roadway that accommodates approximately 22,500 vehicles per day to the west of the Rotary. Interstate 91 and Route 2 are the only Franklin County National Highway System (NHS) Roads, indicating their importance to the regional and statewide road network. In addition to these main roads, there are also several driveways and local roadways that intersect Route 2/2A in the immediate vicinity of the Rotary, adding to the vast array of traffic conditions, roadway conditions, and travel speeds. Adjacent land uses include a variety of commercial and retail type land uses, and residential areas.

The Greenfield Rotary has been the focus of traffic safety discussions for many years as it consistently ranked near the top of both regional and statewide high crash location lists. In fact, the Greenfield Rotary was identified by the FRCOG as the most hazardous intersection in Franklin County from 2004 to 2006 and consistently ranked in the top five from 1995 to 2004.¹⁰



The Greenfield Rotary, prior to the implementation of safety improvements



The Greenfield Rotary, after the implementation of safety improvements

In response to the Rotary's position as a top crash location, FRCOG staff approached MassDOT, who has jurisdiction over the Rotary, with the idea of exploring the design and implementation of a lane marking and signing plan to channel traffic more efficiently and reduce vehicle circulating speeds in order to improve safety and traffic flow. Crash and traffic count data were collected and analyzed, and it was determined that an additional entry lane should be added to the Mohawk Trail (Route 2 and Route 2A) approaches to reduce delays and, in turn, the probability of rear-end crashes. It was thought that adding the additional lanes to these two approaches would reduce the delays on the I-91 approaches and increase the number of gaps in the circulating flow for those vehicles to enter.

¹⁰ Identification of the Most Hazardous Intersections in Franklin County 2004-2006, Franklin Regional Council of Governments, January 2009.

MassDOT undertook the design, and the New York State Department of Transportation (NYSDOT), who had successfully implemented similar improvements to rotaries under their jurisdiction, was consulted during the design process. The bulk of the changes involved adding pavement markings and directional signage, but some minor widening was required to accommodate an additional lane on the Route 2/2A approaches. In addition to the changes to the Rotary, pedestrian improvements were incorporated into the project, including filling in the missing portions of sidewalk between the Rotary and Newton street, bringing the existing sidewalks into compliance with ADA regulations and adding pedestrian activated signals to the Newton Street and Colrain Road intersections. The improvements were completed in the Summer of 2008.

The most recent available crash data was examined to monitor the effectiveness of the improvements at the Greenfield Rotary. As demonstrated in this analysis, many of the crash characteristics (i.e. type of crashes, weather conditions, etc.) of crashes occurring at the Greenfield Rotary remain unchanged before and after the safety improvements were implemented. A comparison of crash frequency, however, shows that there was a decrease in both categories of crashes occurring at the rotary: total number of crashes; as well as, those crashes resulting in \$1,000 of property damage, injury or fatality. However, more data is needed to validate the statistical significance of these findings, and further study will be pursued in future years as additional data becomes available.

Even though crashes at the Greenfield Rotary continue to be of the same type of crashes that occurred prior to the installation of the improvements (i.e. rear-end collisions), promising early results indicate that the overall number of crashes has dropped substantially. Due to the limited availability of data and the short amount of time since the improvements were completed, it is important to continue monitoring this area so that a more statistically significant set of data can be analyzed in the future.

Roundabout at Greenfield Community College (GCC) and Colrain Road

The intersection of Colrain Road and College Drive in Greenfield is located at the entrance to Greenfield Community College (GCC) and experiences delay and safety challenges. MassDOT has been working with Greenfield to develop potential improvements to this intersection and has agreed upon the installation of a roundabout to enhance safety and improve traffic flow. The roundabout is currently under design with a projected cost of \$1.6 million.

Route 2 East Safety Improvements

Background

Route 2 (also known as the Mohawk Trail in Franklin County) has served as the primary east-west highway across the northern portion of the state since the beginning of the 20th century. Safety along Route 2 in Franklin County has been a concern for decades. It is a four-lane highway across the majority of Massachusetts, but it drops to two lanes in Phillipston close to the Franklin County border. The highway from Phillipston west is hilly and winding, has unlimited local access, and at several locations has manufacturing facilities located along it. Route 2 is part of the National Highway System (NHS).

Since the 1960s, the potential widening of the section of Route 2 between Phillipston and the Greenfield town line has been studied and debated at length. Nearly every debate centered around the irresolvable controversy of whether to widen Route 2 through Erving, which would require significant property acquisition, or to cross the Millers River into Wendell and build a new road through the Wendell State Forest. The debate continued into the early 1990s at which time MassDOT notified local officials that until there was local consensus on how to proceed they would take no action.

The 1994 Franklin County Long Range Regional Transportation Plan recommended that, for a variety of reasons, the feasibility of expanding Route 2 from a two-lane to a four-lane highway

between Phillipston and Orange should be studied. Also at that time, the Route 2 Task Force was formed in recognition that a consensus and a new approach were needed if any actions to resolve issues with the roadway were going to be undertaken. The Route 2 Task Force is comprised of Select Board representatives from each town along the corridor, as well as concerned non-profit groups and environmental advocates. The group has met on a regular, often monthly basis, since its establishment in 1994.

In 1995, the recommendation to study the feasibility of widening Route 2 from Phillipston to Orange was modified to focus on identifying and implementing safety improvements throughout the entire corridor from Philipston to Greenfield. The Task Force was committed to developing a safety improvement plan for the entire Phillipston to Greenfield corridor that was endorsed by all of the towns along the corridor. Consequently, MassDOT, the FRCOG, the Montachusett Regional Planning Commission, and the Route 2 Task Force compiled a scope of work for such a study. In May 1996, Wilbur Smith Associates (WSA) was hired to conduct the safety improvement study with \$200,000 in funding being provided by MassDOT.

The primary goal of the *Route 2 Safety Improvement Study* was to conduct a detailed operational analysis of traffic conditions on Route 2 between Phillipston and Interstate 91 in Greenfield, and prepare recommendations for safety improvements that could be implemented in the near term. In April, 2006 MassDOT, as part of a revised environmental assessment of some portions of the safety improvements, formally stated that they were abandoning any plans to expand Route 2 to four lanes west of Philipston due to the extreme cost of such improvements and the unsubstantiated capacity demand for them.

After completion of the Wilbur-Smith Study, MassDOT and the Route 2 Task Force grouped the corridor's recommendations into seven sections in which to concentrate the identification and implementation of specific safety improvements. They were: Athol/Phillipston, Orange, Erving Paper

Mill Corner, Erving Center, Farley, Erving'side and Gill/Greenfield. Since December 2006, significant progress has been made toward achieving these goals. The following is a break down of project status to date.

1. Relocation of Route 2 at Erving Paper Mill

The construction of this bypass around the Erving Paper Mill was the first Safety Improvement to be completed, and it now allows trucks going to the Plant to have unobstructed access to their loading docks. Previously, trucks needed to routinely stop traffic on Route 2 in order to access the docks. This created both a safety hazard and a congestion problem. In addition, workers had to cross busy Route 2 near an "S" curve in order to enter the factory since the employee parking lot was located on the other side Route 2. Finally, the business was landlocked and unable to expand, having the Millers River to its south side, and Route 2 on its north. Conducting a land swap between the Paper Mill and MassDOT allowed the relocation of Route 2 north of its existing location, providing better loading capability for trucks, safer parking for employees, room for facility expansion, and reduction of traffic and congestion. The new stretch of roadway opened to traffic in November 2006 to rave reviews.

2. Athol-Phillipston: Task Force Safety Improvements

The Athol to Phillipston safety improvements were completed in 2007. The improvements included the installation of Qwick Kurb, a median curbing to prevent vehicles from passing on a double line, improvements to Exit 17 (Route 32) in Athol, including changing acceleration and deceleration lanes to lengthen and improve radii. A truck weigh station was created on the westbound side of Route 2 between Exit 17 (Route 32) in Athol and Exit 16 (Route 202) in Orange. Improvements were also made to the eastbound and westbound ramp geometry of Exit 18 (2A) in Athol to eliminate compound curves.

3. Orange

This section of the project includes intersection and climbing lane improvements, as well as

reconstruction of the Route 122 Bridge. The project received approximately \$11 million of ARRA funding in 2010, and is currently under construction. In addition, the bridge over Route 202 is under design and is expected to begin construction in 2014.

Construction on two additional bridges has recently been completed under separate contracts. They are:

- Lake Rohunta bridge
- West River Street bridge over Route 2

4. Ervingside

Improvements in the Ervingside section of Erving were developed in two stages. The first phase was the replacement of two bridges near the French King Bowling Alley and the lowering of the vertical curve between the two bridges. This phase was completed in April 2009. The second phase included the dedication of turn lanes on Route 2 to side streets, and improvements to the side streets feeding Route 2, including Route 63. These improvements entailed protected turn lanes, changes to traffic flow, and new acceleration/deceleration lanes. The cost of the second phase of the project was \$3.4 million. The project was completed in the Fall of 2009.

5. Erving Center

Safety improvements in Erving Center will focus on traffic calming and safer turning movements. The improvements will consist of spot improvements. The design contract was awarded in January 2009. The scope of work was compiled by suggestions from the public, the Route 2 Task Force, and MassDOT in 2007. The improvements include improved access, sight distance, and pedestrian access to the side streets feeding Route 2, and well as a sidewalk connecting Mountain Road with the downtown. Additional public meetings will be held to review the design. The estimated cost of the project is \$2 million, and it is approaching the 25% design stage.

6. Farley

Safety improvements in the Farley area of Erving focus on providing safer turning movements with protected turn lanes and improving sight distance

in some locations. The design for the project will be reviewed at several public hearings. The estimated cost of this project is \$3 million, and it too is approaching the 25% design stage.

7. Gill-Greenfield

Safety improvements in the Gill-Greenfield area will incorporate a protected turn lane (westbound) to access Barton Cove, and provide safer turning movements for the Route 2 businesses near the Avenue A/Route 2 intersection. These improvements are not yet under design. Currently under construction, however, are improvements at the Route 2/Avenue A that are being completed as part of the work to rehabilitate the Gill-Montague Bridge. Recommendations to address the curvature of the roadway in the Factory Hollow area of Greenfield are not progressing at this time due to the extreme cost of realignment related to the presence of ledge and other geographic constraints. Task Force comments and recommendations were compiled after meeting with local residents, and forwarded to MassDOT on October 2, 2002.

During the next several years the Route 2 Task Force will continue working with MassDOT to complete implementation of these critical safety improvements.

Route 2 West Safety Study

The Route 2 West Safety Study is a multi-year study undertaken to provide a detailed review of potential safety issues along the 22-mile Route 2 corridor from and including the Greenfield Rotary west to the Charlemont/Savoy Town Line. Over the past several years, the FRCOG has been involved in a number of studies (Buckland-Shelburne Master Plan, Downtown Greenfield Circulation Study, Mohawk Trail Scenic Byway Corridor Management Plan, and the Identification of the Most Hazardous Intersections in Franklin County) that have included all or a portion of the Route 2 corridor west of Interstate 91. To date, the Greenfield Rotary improvements mentioned above have been the primary focus of the study. A number of recommendations are currently under consideration for other sections of Route 2 West and will be

reviewed to assess their feasibility with MassDOT before being finalized. The recommendations currently being considered (starting at the Greenfield Rotary) are:

- Limit left turns in and out of the Big Y Plaza Driveway onto Route 2.
- Continue two lanes on Route 2 in the westbound direction past the Home Depot driveway.
- Restripe Route 2 up Greenfield Mountain to provide a climbing lane for westbound slow traffic.
- Continue to monitor crash and traffic conditions at the Colrain-Shelburne Road intersection with Route 2 to determine the need for a dedicated right turn lane on in the westbound direction of Route 2.
- Add a protected left-turn lane to the westbound direction of Route 2 at its intersection with South Maple Street.
- Work with MassDOT District 1 and the Town of Charlemont to develop traffic calming measures and pedestrian improvements through the Village Center.
- Identify and investigate areas experiencing multiple lane departure crashes.



Westbound on Route 2, on Greenfield Mountain

Development of Safety Improvements for Hazardous Locations

The Road Safety Audit (RSA) process is an effective tool for improving traffic safety at specific locations

and is a measure that has been supported for many years by MassDOT and the FHWA. For the past several years, Massachusetts has served as a Lead State in preventing run-off the road (lane departure) crashes through the RSA process. The Lead State status was developed in conjunction with the Strategic Highway Safety Plan (SHSP). To date, approximately 18 RSAs have been completed in Massachusetts focusing on lane departure crashes.

In addition to lane departure crashes, MassDOT has also expressed interest in expanding the Massachusetts RSA program to address crash locations involving non-motorized users of the transportation network, as well as intersections where safety is an issue.¹¹ The expansion of the RSA program in Massachusetts to pedestrians and bicyclists as well as other non-motorized transportation users comes at a critical time when it seems demand for these modes of transportation are increasing. In accordance with the MassDOT plan to utilize the RSA program in the future to address pedestrian and bicycle hot spot locations, as well as intersection hot spot crash locations, the FRCOG worked to identify candidate locations in Franklin County which fall into this category.

With the intention of bringing the RSA process to Franklin County, in 2010 the FRCOG performed a study, *Development of Safety Improvements for Hazardous Locations*, to identify specific locations that would benefit most from a RSA. Several potential locations were contained in the *Identification of the Most Hazardous Intersections in Franklin County 2004-2006* report published by the FRCOG in the Summer of 2009. Starting from the top of the ranked list (the most hazardous intersection) and working down, the FRCOG identified five preliminary locations to receive a RSA.

¹¹ MassHighway, "Road Safety Audit," <<http://www.mhd.state.ma.us>>, accessed on August 27, 2009.



A cyclist is observed during the initial site visit

The report documented the existing conditions for five preliminary RSA site locations and concluded with a recommendation to proceed with a RSA at four of these locations. As a result of this analysis, final site location recommendations included:

- **Conway Street; from the intersection of Conway Street at Grove Street to the intersection of Conway Street at Devens Street (Greenfield).** The intersections of Conway Street at Devens Street and Conway Street at Grove Street were ranked high on the top 50 most hazardous locations in Franklin County list at numbers 2 and 5, respectively. The identification of two sites located on the same roadway close to each other indicates that the problems experienced at these intersections may not be completely isolated. It was, therefore, determined that studying the two intersections, as well as the roadway which links them (Conway Street Corridor), may reveal corridor-wide issues. This site was chosen because of the high ranking of each of the two intersections, as well as the presence of pedestrians and bicyclists within the study area.
- **Wells Street at Allen Street (Greenfield).** The intersection of Wells Street at Allen Street was included in the final recommendation as a site which should receive a RSA because of its high ranking on the top fifty most hazardous locations list (ranking number 4) as well as the presence of pedestrians and bicyclists within the study area.

- **Route 5/10 at Christian Lane (Whately).** The intersection of Route 5/10 at Christian Lane is a recommended location to receive a RSA because the preliminary site visit indicated the potential for several low cost safety improvements to be made at this intersection. Furthermore, this location was ranked within the top ten (ranking number 6) on the top fifty most hazardous locations list. While there may be some larger-scale design concerns at this intersection, it has been determined that there may be potential for this location to benefit from a RSA.
- **Route 202 at Prescott Road (Shutesbury).** The intersection of Route 202 at Prescott Road is not recommended to receive a RSA at this time due to physical limitations of the design of the roadway and surrounding site conditions. The rural nature of this roadway, among several horizontal and vertical curves, as well as the lack of pedestrian or bicyclist traffic indicated that there may be very few low-cost safety improvements which can be implemented at this location. Therefore, while this location should be studied in greater detail to determine the potential for safety improvements in the future, the RSA process does not seem to be the most beneficial medium for this location.

In conclusion, preliminary site evaluations were performed for five high crash intersections in Franklin County, it was determined that four of these intersections could benefit greatly from a RSA.

Road Safety Audits

The RSA process is a formal safety examination of an existing or future roadway or intersection by an independent, multidisciplinary team to identify potential safety issues and possible opportunities for safety improvements. Identified safety improvements range from short-term, low-cost options to large scale redesign improvements. However, the majority of the improvements are focused on short and mid-term, low to mid-cost safety improvements that can elicit immediate results. The RSA process involves an audit team that

typically includes representatives from State and Local agencies, such as State Transportation Officials and local Public Safety Officers.

The FRCOG, in conjunction with MassDOT and local municipalities has performed several RSAs in Franklin County. To date, ten (10) RSAs have been performed in the communities of Deerfield, Greenfield, and Whately. The specific locations of these RSAs are:

- Route 5/10 (Greenfield Road) at Route 116 (Conway Road), Deerfield;
- Route 5/10 (Greenfield Road) at North Main Street, Deerfield;
- Route 116 (Sunderland Road) at Sugarloaf Street, Deerfield;
- Interstate 91 at Exit 25, Deerfield;
- Conway Street at Devens Street, Greenfield;
- Conway Street at Grove Street, Greenfield;
- Conway Street Corridor (between Devens Street and Grove Street), Greenfield;
- Wells Street at Allen Street, Greenfield;
- Interstate 91 at Exit 24, Whately; and
- Route 5/10 at Christian Lane, Whately.

Audit team members from the FRCOG, MassDOT, FHWA, and municipalities joined the RSA team leader, hired by MassDOT. For each location, the RSA team performed a review of background information such as traffic volumes, crash information, and operation concerns from local officials. After a review of background information was performed, the team visited each of the locations to analyze these issues in a hands-on, collaborative environment. Each RSA concluded with the audit team developing an extensive list of challenges, issues, and potential solutions for the study area. Final recommendations were provided to audit team members by the consultant, upon completion of the report.



Road Safety Audit (RSA) team members in the field

Improve Emergency Response Times via an Updated GIS Network

There are several tools which can aid in improving emergency response to an event. Emergency vehicle preemption is one proactive tool that can be used. Another aspect of emergency response is the accuracy of the information emergency responders use to reach an event. The transportation network is dynamic in nature as road conditions and accessibility may change over time. The FRCOG is currently working on identifying potential changes to the Road Inventory File (RIF), which contains information used by emergency responders about the transportation network. An updated RIF will help improve emergency response times.

Bicycle and Pedestrian Facilities

Bicycle Facilities

With the growing number of bicycle facilities available to potential riders, there is increased use of bicycles for both transportation and recreational purposes. As a result, strategies to make use of this mode of transportation as safe as possible have been encouraged. These strategies include providing off-road facilities to separate bicycling and motorized traffic, installing signage identifying shared roadway facilities, and providing general safety education.

The location and design of Franklin County Bikeway facilities take safety into consideration. An example of a bikeway project that was able to address a specific safety concern in a community is the off-road Riverside Greenway Bikepath in Greenfield.

This section of the Franklin County Bikeway was able to successfully link a dense residential area with a popular swimming and recreation area. Previously, residents, including many children, would use a discontinued road and cross the Green River as a shortcut to the recreation area. The bikepath has alleviated this potentially dangerous situation by creating a paved path and bridge over the Green River.

The Canalside Trail, which links the Towns of Montague and Deerfield, took specific precautions to address safety issues. This section of the Franklin County Bikeway is a 3.27-mile off-road bicycle path that travels along the Connecticut River Canal in Turners Falls and over a rehabilitated rail bridge into Deerfield. The bikepath incorporates fencing along the canal, and pavement markings and signage along the roadway to identify the bicycle route.



The Canalside Trail, in Turner's Falls

The FRCOG worked in conjunction with the Pioneer Valley Planning Commission to implement a Transportation Demand Management Program project called *Share the Road in the Connecticut River Valley: An Infrastructure Improvement Project and Campaign to Promote Traveling by Bicycle*. The purpose of this project is to increase accessibility and awareness for bicycle commuting in the region. The project included the purchase, distribution and installation of the Franklin County Bikeway Logo Trailblazing Signs and Share the Road signs along the designated shared roadway routes of the

Franklin County Bikeway. The sign installation was completed in December 2009. The project also included the purchase and installation of bike racks throughout the Franklin and Pioneer Valley Regions.



A Franklin County Bikeway Sign

The FRCOG has also produced four comprehensive maps depicting bicycling routes throughout the county. The four maps include the original Franklin County Bikeway map, Central Franklin County Bikeway map, Eastern Franklin County Bikeway map, and the Western Franklin County Bikeway map. The routes highlighted are ranked for rider ability and topography to encourage safety.

Pedestrian Facilities

In many cases, the sidewalks and streets in the downtowns and village centers of Franklin County were originally laid out hundreds of years ago. Since then, these locations have required some updating to adjust to modern transportation demands while also providing a safe environment for pedestrians.

The FRCOG has been a leader in several initiatives to encourage walking and providing safe connections for pedestrians. Strategies to achieve safer walking environments include creating pedestrian facilities where they previously did not exist but were needed, improving existing facilities, and providing useful information to support municipal level pedestrian planning.

The FRCOG has prepared a draft *Franklin Regional Pedestrian Plan*, that identifies the pedestrian

infrastructure needs of the towns, and locations that could most benefit from increased sidewalks or new linkages. This will assist in designing pedestrian improvement projects to dovetail with highway repair/construction projects as they develop. An example of an area that could support a great deal of pedestrian activity, but is not currently conducive to walking is found at the flagship Yankee Candle Store and the other nearby tourist destinations in South Deerfield. Although the shops are located in easily walkable proximity to each other, the lack of sidewalks along Route 5/10/116, the width of this heavily traveled road, poor pedestrian connections, and the lack of a human scale development pattern encourages driving to each stop. Future efforts to address this situation are planned.

Route 116/7-11 Plaza - Sunderland

Following the tragic death in December 2004 of a pedestrian crossing Route 116 in front of the 7-11 Plaza in Sunderland, the FRCOG assisted the Town of Sunderland and MassDOT to identify measures that would be implemented in the study area to improve pedestrian, bicycle, and vehicle safety. As part of the problem identification process, extensive crash and traffic data was collected and analyzed. The final design consisted of replacing the four current marked crosswalks with one clearly marked crossing that includes in-pavement pedestrian activated lights; installation of Tyregrip roadway markings; relocated and centralized bus stops; sidewalks along both sides of the roadway; addition of exclusive left turn lanes at Old Amherst Road and Squire Village Drive; and improved roadway lighting.

The Route 116 corridor consists of a bidirectional roadway (one lane per direction) with a posted speed limit of 40 mph within the study area. The 85th percentile speed, the speed at which 85 percent of motorists travel, ranges from 45 mph to 55 mph. This speed indicates the speed that most motorists on the road consider safe and reasonable under ideal conditions. The area is characterized by multiple commercial access driveways, residential driveways, and transit bays. In 2007, data collection for the area showed approximately 35 pedestrians

per hour crossing Route 116 during peak hours, and approximately 14,000 vehicles per day traveling this stretch of road at its peak location in front of the Cliffside Apartment Complex. A noticeable population of students attending the University of Massachusetts, Amherst lives within or adjacent to the study area, and commuters to the University from around the region travel the road using a combination of personal automobiles, public transit, and bicycles. Travel speeds, combined with the relatively high pedestrian demand and the mix of travel modes (e.g. transit, bicycles, etc.) contribute to the safety challenges in this area.

The effectiveness of the installed safety improvements were evaluated by FRCOG and MassDOT. Both agencies determined that the implemented safety improvements had a positive impact on improving the safety along the corridor by decreasing crash frequency as well as crash severity. In other words, the frequency of crashes decreased and the type of crashes shifted away from the more dangerous angle type crashes to the typically less severe rear-end type crashes. While the improvements were shown to improve the safety of the area, there was still some concern that more safety improvements could be made. This need for additional safety measures was revisited when, on September 8, 2009, two pedestrians were struck while crossing in the crosswalk on Route 116. Both pedestrians survived the incident; however, one had several injuries. This crash prompted additional discussions between MassDOT, the Town, residents, and the FRCOG. The resultant solution was the installation of a traffic signal at the intersection of Squire Village Drive and Route 116, where the one crosswalk is located. The traffic signal was installed and activated on October 22, 2009.

Overview of Previously Installed Safety Improvements

- **Traffic Signal:** As mentioned, the latest incident led to the installation of a traffic signal at the intersection of Route 116 and Squire Village Drive. The traffic signal allows pedestrians to push a button and activate the signal, forcing vehicles on

Route 116 to stop for their crossing. The traffic signal also allows vehicles exiting from Squire Village Drive to safely make left hand turns onto Route 116.

- **Crosswalks:** Prior to the implementation of the various safety improvements, the Route 116 corridor consisted of four mid-block pedestrian crosswalks within the study area. Consolidating the four crosswalks into one crosswalk was intended to help increase driver awareness by defining one central location to expect pedestrians, instead of four. Additionally, this consolidation is also intended to help improve traffic flow along Route 116 as vehicles should only have to slow or stop for one location.
- **Tyregrip:** Another safety improvement installed within the study area is the Tyregrip high friction surfacing system. Tyregrip is a high color contrast, textured material applied to the pavement surface to act as a median or lane marking without the installation of a raised barrier. It is intended to improve roadway safety by adding more definition to the roadway geometry, separating opposing traffic streams, and delineating the roadway.
- **Relocation of Bus Bays:** As part of the original improvements, the relocation of the PVTa bus stops was identified as an important change. The most significant change was the relocation of the northbound transit stop which was originally located just south of the Squire Village Driveway (across from the 7-Eleven Plaza). This transit stop was moved to north of the Squire Village Driveway and a more definitive bus pull out bay was created to safely remove the loading and unloading bus from the traffic stream. By moving the location of the transit stop to north of the crosswalk, a stopped bus no longer impedes the visibility of a pedestrian in the crosswalk. Additionally, the more defined bus bays provide more shelter to the buses

and the pedestrians entering and exiting the buses.

- **Sidewalks and Protected Turn Lanes:** Sidewalks were installed on both sides of Route 116 within the study area, along with protected left turn lanes at Old Amherst Road and Squire Village Drive. The addition of these sidewalks was a natural solution to improving pedestrian facilities, particularly given the steady pedestrian demand. The addition of protected left turn lanes within the study area also helps improve traffic safety, as well as, traffic operations by removing the turning vehicle from the traffic stream.
- **Lighting:** Improved roadway lighting near the crosswalk improves nighttime visibility in the study area. The additional roadway lighting can also help communicate to motorists that they are entering into a different roadside environment.

The following improvements were part of the 2004 Safety Improvement Project, but were removed as part of the more recent improvements that took place in 2009. The installation of the traffic signal no longer made these improvements relevant.

- **In Pavement Warning Lights:** In-pavement flashing warning lights that were embedded into the pavement at the location of the new, consolidated crosswalk were removed.
- **Flashing Beacons & Pavement Markings:** The flashing beacons were installed to supplement the visibility of the in-pavement warning lights. With the installation of the traffic signal and removal of the in-pavement warning lights, the flashing beacons were no longer necessary.

Streetscape Projects

A number of streetscape projects have been completed in Greenfield, Conway, Shelburne Falls, Millers Falls, and Northfield. These projects have resulted in enhanced pedestrian crossings, lighting

and, in turn, safety and comfort for pedestrians in these areas. Reviewing pedestrian considerations have now become a standard procedure for inclusion in any road improvement project. An excellent example of this is seen with the Greenfield Rotary Improvement project. Incorporated into that project were completion of critical missing sidewalk links and the addition of pedestrian activated signals, both of which were in the immediate area of the rotary.

Recommendations for Transportation Safety

- Design and Construct **Route 2 Safety improvements** in Erving Center, Farley, and Gill/Greenfield.
- Continue to evaluate the effectiveness of the improvements constructed at the **Greenfield Rotary**.
- Create a **climbing lane along Route 2 West** up Greenfield Mountain.
- Add a **dedicated Left Turn Lane** at the intersection of Route 2/Maple Street in **Shelburne**.
- Continue to monitor the need for and feasibility of adding a **dedicated right turn lane** at the intersection of Route 2/Colrain-Shelburne Road in **Shelburne**.
- Evaluate alternative options to **improve safety at commercial driveways** along Route 2 West in Greenfield.
- Work with MassDOT to develop and implement **traffic calming and pedestrian improvements** along Route 2 West through the Charlemont Village Center.
- Construct a **roundabout** at Investigate at the intersection of Colrain Road/Colrain Street/College Drive at Greenfield Community College in **Greenfield** to improve traffic flow and safety.
- Investigate alternative intersection treatments to **improve safety and traffic flow at the** intersection of Cushman Road/Shutesbury Road in **Leverett**.
- Continue to be involved in the process related to the **Strategic Highway Safety Plan**.
- Continue to **monitor the effectiveness of the safety improvements** implemented along Route 116 in Sunderland.
- Continue to monitor **high crash locations** and work with MassDOT and Towns to develop recommendations to improve safety.
- Work with MassDOT, Towns, and Police Departments to identify **corridors experiencing elevated numbers of “Lane Departure”** crashes. Develop strategies to mitigate this type of crash.
- Continue to **conduct Road Safety Audits** as necessary and appropriate.
- **Implement safety recommendations** from the Road Safety Audits, including the realignment and potential signalization of Exit 24 off of northbound I-91 onto Route 5/10.



Transportation Security

14 Transportation Security

Transportation security issues and protecting the transportation system from threats and disruptions is an important topic. The attacks on the World Trade Center in September 2001 and Hurricane Katrina in September 2005 each demonstrated the vulnerability of our transportation system in different but important ways. These events also highlighted the need for coordinated emergency planning and management to deal with such disasters. It is essential to have emergency management infrastructure systems in place in advance of disasters to best handle emergency response. It is also essential to take steps to protect our transportation infrastructure itself from potential security threats.

Transportation security is also a key component of the Massachusetts long-range state transportation plan, A Framework for Thinking – A Plan for Action (2006). One of the eight guiding principles of the state plan is that “the transportation system of the Commonwealth of Massachusetts shall be secure, with all modes and users protected against external threats.” Similarly, transportation security is one of the eight planning factors required by SAFETEA-LU to be considered by transportation planning organizations during their planning processes.

In Franklin County, many of the planning efforts related to the region’s transportation security are relatively recent, having begun within the last five to ten years. There has been some attention paid to the need for planning for evacuations in the face of an emergency – such as flooding, a hazardous spill, etc.; however, these planning efforts have been stepped up significantly in recent times. There has also been a new focus on increasing the security of transportation facilities themselves. This chapter provides a summary of the transportation security activities currently occurring within the Franklin County region and makes recommendations for future transportation security planning.

Emergency Planning Activities

To date, emergency planning activities in Franklin County have focused on general emergency preparedness and training, and on the coordination between towns and agencies in response to a disaster. There has been a large emphasis on training, improving emergency communications infrastructure, and evacuation planning. Two major committees working on emergency planning in Franklin County are the Franklin County Regional Emergency Planning Committee and the Western Regional Homeland Security Advisory Council.

Franklin County Regional Emergency Planning Committee

The Franklin County Regional Emergency Planning Committee (REPC) was established in 2000, at the request of Franklin County towns. The REPC is staffed by the FRCOG, and the REPC has a broad membership, including public safety officials, health professionals, industry executives, local government workers, and other community members. The initial focus of the Emergency Planning Committee was to assist all municipalities in the county in meeting federal and state mandates for emergency planning. The federal Emergency Planning and Community Right to Know Act (EPCRA), passed in 1986, requires communities to develop emergency planning under a local Emergency Planning Committee, and to maintain data on hazardous materials. Massachusetts General Law (Chapter 21E) and Executive Order 242 also require planning by communities for emergencies. The focus of the REPC has now been expanded to address all areas of emergency preparedness in the region.

The FRCOG and the REPC sponsor and provide workshops for emergency response staff and local community leaders in the region to meet local and state training requirements regarding emergency incident management and hazardous materials handling and spills. The REPC also oversees the formation of volunteer Community Emergency Response Teams (CERTs), and training for the CERT

teams. CERT team members have a wide variety of general and technical skills. A group of residents that have received the CERT training has formed the Franklin County Community Emergency Response Team. A related group is the Franklin County Medical Reserve Corps (MRC), a team of volunteers with experience and expertise in health care and related fields. The Franklin County CERT and MRC teams can provide important support to first responders during a critical incident, and can also assist with non-emergency projects that improve the health and safety of a community. Both the CERT and MRC programs are part of the federal Citizens Corps initiative, which is funded through the Department of Homeland Security's Office of State and Local Government Coordination and Preparedness.

In December 2008, CERT and MRC provided over 250 volunteer hours of support during a severe ice storm to aid in shelter operations and emergency communication in the Towns of Heath, Warwick, Shelburne, Conway, and Gardner.

In 2009, the REPC secured \$83,500 from the Western Region Homeland Security Advisory Committee to fund four regional exercises on the following topics: Moore Dam Flooding, Mass Casualty, Hazardous Material Evacuation, and Tactical Communications.

Western Region Homeland Security Advisory Council

The Western Region Homeland Security Advisory Council (WRHSAC) was created in 2004 with the charge of improving the region's ability to respond to large-scale emergency incidents or disasters (WRHSAC web site: www.wrhsac.org). The WRHSAC covers the 101 cities and towns in Franklin, Berkshire, Hampden, and Hampshire Counties, and is one of five similar councils in Massachusetts, each one covering a different part of the state. The fifteen original members of the WRHSAC were appointed by former Governor Mitt Romney. Subsequent members are appointed by the Massachusetts Executive Office of Public Safety (EOPS). WRHSAC's voting members represent regional transit, fire services, law enforcement,

emergency medical services, public works, corrections, public health, hospitals, emergency management, and public safety communications. There are also ex-officio members from the Massachusetts Emergency Management Agency (MEMA), from the EOPS, which oversees the council, and from the FRCOG. The FRCOG serves as the fiduciary, the financial agent for the council. Funding for the council's activities comes from the federal Department of Homeland Security's Office of State and Local Government Coordination and Preparedness.

The Western Region Homeland Security Advisory Council works with the regional planning agencies in each region, and a variety of state agencies. The six primary goals of the council, as listed on the council's web site, are:

- Identify threats and vulnerabilities within the region;
- Plan regionally to protect critical infrastructure and key assets;
- Train first responders and local officials;
- Improve interoperability
- Gather and share information between communities and agencies; and
- Conduct multi-jurisdictional exercises for large-scale incident management¹.

In 2004, the WRHSAC prepared the Western Massachusetts Regional Homeland Security Plan. This plan, which is submitted to the Massachusetts Executive Office of Public Safety (EOPS) is updated annually, and describes the WRHSAC's proposed investments and projects for each year. The FRCOG and the other regional planning agencies that are part of the WRHSAC, the Berkshire Regional Planning Commission and the Pioneer Valley Planning Commission, have been working to develop tools to strengthen the region's response to large-scale natural and man-made disasters. These tools include the following: a regional mutual aid agreement to facilitate the sharing of resources among towns; information on priority critical infrastructure; and evacuation planning for special needs populations.

¹ Western Region Homeland Security Advisory Council Website. www.wrhsac.org

Since 2009, the WRHSAC has been involved with the statewide interoperability Executive Committee. The WRHSAC coordinated the purchase and expansion of an information sharing system for police, fire, and Sheriff's Departments of Franklin, Hampden, Berkshire, and Hampshire Counties.

Also, improvements were made to the interoperable emergency communication system for police, fire, and EMS. An emergency preparedness planning conference was held in each western county for agencies providing support to individuals requiring additional assistance. Ongoing development of the Regional Evacuation and Sheltering Plan has occurred, including the completion of a shelter assessment survey and the development of Transportation/Evacuation modeling software to be used in plan and exercise development. Sheltering supplies and trailers were purchased and strategically located throughout the region.

Local Public Health

The Fall of 2009 was a challenging year for Local Public Health, which is a combination of Local Boards of Health and Mohawk Area Public Health Coalition (MAPHCO). In response to the H1N1 Pandemic, Local Public Health, and FRCOG held coordinated H1N1 Vaccine Emergency Dispensing Sites (EDSs) across the Franklin County region. More than 20 EDSs were held, at least two in each sub region of the county.

This was accomplished by an unprecedented cooperation between Local Public Health in 26 towns with support from FRCOG including: buying supplies centrally and distributed to each EDS; hiring Regional Planning Nurses to work at the EDSs; and Greenfield acting as the central depot for the vaccine. Local Public Health and FRCOG staff met weekly as a Joint Information Center (JIC) to develop weekly messages and coordinate distribution of information on H1N1. Finally, relationships between Fire, Police, EMS, Local Public Health and all the schools were improved as they worked together to ensure that anyone who

wanted to receive the vaccine had free and easy access.

Improvements to Communications Infrastructure

Over \$5 million has been invested into the Franklin County Emergency Communication System (FCES) which is a model interoperable public safety radio communication system. This eleven-site system replaced one that was originally constructed in the 1950s. Nine of the sites host two simulcast channels, one for Fire and one for Police, for countywide communications. Shelburne Control serves as the regional 911 and emergency dispatch center for Franklin County. The dispatch center, which is located at the Massachusetts State Police B-2 barracks in Shelburne, is the largest regional dispatch center in Massachusetts.

The Franklin County Emergency Communication System Oversight Committee (FCES Oversight Committee) ensures that the region's interoperable radio communications systems is operated, maintained, expanded, and upgraded to fully serve all areas and users in Franklin County to the extent possible. The committee includes representation from fire, police, EMS, the FRCOG, and Shelburne Control.

The new radio system is not yet coordinated with the radio system used by the Franklin Regional Transit Authority (FRTA), and this is an area where improved communication may be warranted. Currently, if FRTA buses are needed to assist with an evacuation, a portable radio that links to the regional radio system could be provided to the FRTA main office to allow the FRTA to communicate with emergency personnel. The FRTA could then use its own radios to communicate with its bus drivers.

Other important communications tools that are useful for emergency planning, but have not yet been fully implemented or coordinated with the upgraded radio communications, include intelligent transportation system (ITS) technologies and high-

speed internet access. ITS infrastructure in the region is discussed in detail in Chapter 11 of the Regional Transportation Plan. ITS infrastructure can provide real-time traffic and roadway condition information to improve roadway safety and efficiency. ITS can also enhance transportation security by helping to minimize disruptions to the transportation network due to accidents, congestion, and other issues, and by facilitating the diversion of traffic and the evacuation of residents, if necessary, when an emergency occurs.

The Regional Traveler Information Center (RTIC), a cooperative project of the University of Massachusetts at Amherst (UMass) and MassDOT, collects, analyzes, and disseminates traffic and public transportation information for use by state and local agencies, private entities, and the general public. One element of the RTIC's operations has included the installation and maintenance of cameras along Route 116 in Deerfield and Sunderland, and along Route 9 in Hadley and Northampton to help monitor current traffic conditions. The camera views are accessible from the internet (www.masstraveler.com/webcams.html) and provide real-time information on traffic flows. Additional camera locations are being evaluated for potential installations in other areas of Franklin County in the future.

Other useful ITS technologies include weather sensors and variable message signs. MassDOT has installed weather sensors along Route 2 and is planning them for other corridors in the region. The weather sensors provide data on temperature and current roadway surface conditions. The weather sensor data is used by MassDOT staff, but is not yet available to the general public or town highway superintendents. Variable message signs have been installed by MassDOT along the Route 2 corridor and along I-91 just south of Franklin County. Numerous mobile message signs are also used throughout Western Massachusetts. These signs provide important messages to residents regarding traffic conditions and

construction schedules, and they could be used to help direct traffic in an emergency.



View from a Regional Traveler Information Center (RTIC) camera located on Route 116 at Route 47, in Sunderland

The Massachusetts Broadband Institute (MBI) was established in 2008 by Governor Deval Patrick and the state legislature. The mission of the MBI is to bring broadband service to all Massachusetts homes, businesses and government buildings. The approach is to make strategic and targeted public investments that will lower the economic hurdles for private providers to invest in unserved or underserved areas. The MBI is a division within the Massachusetts Technology Collaborative (MTC), an economic development agency of the State. The MBI was capitalized with \$40 million of General Obligation Bonds approved by Governor Patrick.

Twenty-seven police stations have no access to the State's Criminal Justice Information System and eighty-five stations only have limited internet access. Every First Responder should have access to nationwide public safety wireless network. The MBI strategy for Western Massachusetts is to bring the middle mile backbone of the telecommunications infrastructure into underserved and un-served areas, and establish connections to community anchor institutions. This strategy will create an economically viable market for private sector providers to invest in connecting to and serving homes and businesses. This segment of the network is called the last mile.

The majority (62%) of survey respondents were unsure of or had no opinion about the status of Intelligent Transportation System (ITS) improvements over the past five years. Approximately 21% of respondents felt that the ITS has remained the same in that time.

The MBI has received a \$45 million grant from the American Recovery and Reinvestment Act (ARRA). The MassBroadband 123 project plans to build an open access, middle mile fiber network serving the western and north central area of Massachusetts. The project will install 1,388 total miles of fiber and conduit. A total of 1,492 anchor institutions will be connected directly to the network. Within three miles, it will reach 95 percent of all residents, business and anchor institutions and is estimated to create approximately 2,200 jobs. The project is anticipated to be fully completed within 2.5 years. This network will provide the essential foundation for economic growth and stability to this region.

The I-91 fiber portion of the project installed 55 miles of 288-strand fiber from Connecticut to the Vermont border. This was the first segment of a regional Western Massachusetts fiber optic-ring that will bring broadband to unserved citizens in the region for years to come. The conduit will be available for lease by private telecommunication fiber providers, which will encourage and ease the expansion of telecommunications facilities throughout the Pioneer Valley and Franklin County. ITS components installed along the corridor include variable message signs, cameras, and weather sensors, all of which will help make I-91 less congested, safer and a more secure highway. In the long-term, this ITS technology can also be coordinated with current emergency response systems to enhance the region's ability to manage large-scale emergency events and facilitate evacuations if necessary.

In 2010, the MBI signed a Memorandum of Understanding (MOU) with the Department of Conservation and Recreation (DCR) to facilitate access to their fire towers. This will provide easier access to install wireless broadband systems, reduce the cost of deployment, reduce the need for new towers, and allow for faster permitting.

Emergency Planning for the Vermont Yankee Nuclear Plant

The Vermont Yankee Nuclear Power Station, owned by Entergy, is located in Vernon, Vermont, just north of Franklin County. An Emergency Planning

Zone (EPZ) for the facility has been established for an approximate ten-mile area around the facility, and plans have been developed for warning and protecting residents within this zone. The EPZ includes the entire Towns of Bernardston and Leyden, and portions of the Towns of Colrain, Gill, Greenfield, Northfield, and Warwick. Residents of the EPZ are provided with written information on what to do in the event of an emergency at the nuclear power station. This information is distributed annually to residents through an emergency public information calendar produced as a public service by Vermont Yankee, the Massachusetts Emergency Management Agency (MEMA), and the Massachusetts Department of Public Health. Residents of the Emergency Planning Zone are also provided with tone-alert radios that will sound in the event of an emergency at Vermont Yankee or natural disasters (and for weekly testing). In the event of an emergency at the plant, warnings would also be issued through outdoor emergency sirens (Bernardston, Colrain, and Northfield only), broadcasts from loudspeakers on emergency vehicles, and special announcements on local Emergency Alert System radio stations.

The emergency plans for Vermont Yankee include details on what residents should do if they are instructed to evacuate or to shelter-in-place and stay where they are. All the schools and daycare centers within the Emergency Planning Zone (EPZ) have emergency plans of their own, and in the case of an emergency, school and daycare children would be moved to reception centers and host facilities outside of the EPZ. If an evacuation is necessary, information will be provided through Emergency Alert System radio stations on which evacuation routes residents should take. The wind direction may affect the recommended evacuation route, though the primary evacuation corridors include I-91, Route 2/2A, Route 63, and Route 5/10. Residents will be directed to a reception center at the Greenfield Community College main campus where assistance for evacuees will be available. Alternative reception centers serving the Emergency Planning Zone are the Bellow Falls Union High School in Bellow Falls, Vermont, and Keene State College in Keene, New Hampshire. At the reception

centers, emergency workers will help evacuees receive information on other family members, and will direct people needing a place to stay to a mass care shelter that will provide meals and lodging. The emergency plans include provisions for assisting residents with special needs.

Challenges for Large-Scale Evacuations

Consideration of the transportation network in evacuation planning is essential and due to its rural nature, there are several challenges for large-scale evacuations in Franklin County. A map is contained at the end of the chapter which shows the main evacuation routes for the region. These routes have been identified by local communities through their emergency planning processes and the creation of their Comprehensive Emergency Management Plans (CEM Plans) that all municipalities are required to develop.

The cause of any large scale emergency in Franklin County will significantly impact an evacuation. An evacuation caused by a flood, for example, will place a significant strain on the remaining available transportation network to be used in an evacuation. Additionally, as has been demonstrated in the Harriman Dam Evacuation Plan, several of the areas' critical facilities and shelters will be inundated by a flood, thus making them inaccessible. An evacuation resulting from other catastrophes and hazards may take a very different form. A hazardous spill may bisect the county and sever access to the two primary roadways in the region - Interstate 91 and Route 2. It is for this very reason that the potential impacts of several different emergency situations be evaluated for the county to identify barriers and constraints to an evacuation.

In 2009, the Federal Highway Administration (FHWA) developed a report entitled *Good Practices in Transportation Evacuation Preparedness and Response*.² The purpose of this report was to document the results of a workshop series regarding emergency planning. The workshops were organized into three phases which consist of:

² Good Practices in Transportation Evacuation Preparedness and Response: Results of the FHWA Workshop Series. Federal Highway Administration (FHWA), August 2009.

(1) Preparation and Activation, (2) Response, and (3) Re-entry and Return to Readiness. The preparation and activation phase refers to the stage in which emergency communication and evacuations plan are developed and first notification of an emergency is received. During this stage, pre-evacuation planning occurs and an evacuation plan is implemented. Communication and activation are the key tenants of this phase. The evacuation planning efforts described herein seek to provide a foundation for development of formal evacuation plans and fall into the preparation category. Formal evacuation plans, however, will plan for all three phases, from activation of the plan to re-entry and return to readiness following an event. These three phases outline the major components of an evacuation plan and illustrate the complexity of factors which go into a safe and efficient evacuation.

A safe transportation system protects users from hazards, including hazards resulting from climate-related stresses on the system. It is expected that more extreme weather events will lead to more precipitation and flooding. It is critical that infrastructure be planned and maintained to be able to withstand a higher frequency of these events. Furthermore, such events may be more severe in the future, so a revised examination of potential flooding areas and critical infrastructure should be performed. The FRCOG has been working with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to prepare preliminary evacuation plans for Western Massachusetts. Most recently, two emergency scenarios were evaluated for Franklin County which consist of (1) a failure of the Harriman Dam, and (2) a four-county Hurricane evacuation.

Harriman Dam Failure Case Study

The FRCOG worked in conjunction with the University of Massachusetts Transportation Center (UMTC) to develop a preliminary evacuation plan for Franklin County communities in the event of a failure of the Harriman Dam. Located in south central Vermont, Lake Harriman is a man-made lake

which was created by the New England Power Company in 1932 to facilitate hydroelectric power. The lake was created by flooding 2,200 acres of surrounding farms and woodland. Via use of a spillway, water from the Harriman Dam feeds into the Deerfield River which traverses through Franklin County, beginning at its northwestern border with Vermont. A structural failure of the Harriman Dam would have devastating consequences for Franklin County. The purpose of this analysis was to evaluate the transportation network during an evacuation as well as to identify areas that are expected to become inundated (flooded). The UMTC performed the modeling of this scenario.

The Deerfield River traverses through several communities in the western part of the county, and it is very important to understand how adjacent communities' roadways, emergency personnel and resources may be impacted. The village centers that would be impacted include Charlemont, Shelburne Falls, Greenfield, Turners Falls, and Deerfield. By becoming familiar with the inundation areas and better understanding the limitations of the transportation network during such an event, local emergency planners can make more informed emergency planning decisions to help maximize the safety and efficiency of an evacuation. This analysis consisted of the preliminary assessment of the impacts of a flood on the transportation network and its ability to accommodate an evacuation. The results of this analysis estimated the amount of new trips generated by the evacuation on the transportation network, an analysis of the availability of evacuation modes such as the personal automobile, assessed the expected capacity of shelters in the region, and identified critical locations in the transportation network. The resulting recommendations were identified based on the results of this analysis and are aimed at local officials and emergency personnel charged with planning for an evacuation following failure of the Harriman Dam.

A supplemental report to the Harriman Dam Failure Case Study was developed after the identification of a need for more specific recommendations for each of the towns in the inundation area. These Town

Recommendations provide a closer look at each of the communities which are impacted by the flood. More specifically, a closer analysis of the critical facilities for each of the towns directly impacted by failure of the Harriman Dam has been performed. These recommendations are to be used only as a starting point for the development of specific emergency plans in each of the towns. In addition to the supplemental report, more detailed maps were created for each of the inundated sections to help towns develop more detailed evacuation plans.

Four County Hurricane Evacuation Case Study

The FRCOG worked in conjunction with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to evaluate an emergency scenario in which a hurricane forces a full evacuation of all four of the Western Massachusetts counties (Berkshire, Franklin, Hampshire, and Hampden). The hurricane was modeled to split the region in two, sending people to the east and west. This analysis sought to determine the impacts of a hurricane evacuation on the transportation network of Western Massachusetts.

This study was developed to help emergency planners create formal evacuation plans in the event of a hurricane. The information contained in the study will assist with critical evacuation planning decisions, such as evacuation routes and timing. Potential travel times can be relayed to the public to inform them of what routes might be significantly delayed. Some routes in the network may be underutilized. Through this methodology, the routes can be discovered and then that information can be reported to the public. Some additional implications of this research help identify alternatives to evacuation if evacuation is not possible or feasible. This may include the use of additional shelters which can be stocked with extra food, water, and beds. Buses can be diverted to serve these areas. The citizens of these counties can be notified via radio or television about the availability of extra buses or shelter space.

Transport of Hazardous Materials

In August 2006, the Franklin County Regional Emergency Planning Committee (REPC),³ completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the Franklin Regional Council of Governments. The development of the HMEP served several purposes, including compliance with the statutory requirements that all local Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize hazardous materials release reporting, notification, and response. The creation of the HMEP was funded through a congressional earmark to the FRCOG. The HMEP is formally updated every three years, but reviewed annually. Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times, and that consequently any rail line or roadway can be a potential hazardous material spill site.

The HMEP includes an analysis of the level of hazardous material transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. The only known

significant transportation change since the 2007 report is the increase in ethanol transport by rail through the county. A training activity to address this topic is planned within the next year according to the Chair of the Franklin County Emergency Preparedness Committee.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted several training exercises in the last few years for dealing with chemical spills. The most recent training was a Hazardous Material tabletop exercise held on October 22, 2009. This exercise simulated a transportation-related release and public evacuation protocol. Another upcoming training will address the increased ethanol transportation by rail in Franklin County as stated above. The REPC has been called out on nine different occasions since 2007 to assist with actual chemical incidents in Franklin County.

GIS Tools for Chemical Incident Response

The FRCOG maintains hazardous material facility location maps within the region using Geographic Information Systems (GIS) and Tier II Submit software provided by the Environmental Protection Agency (EPA). Hazardous material facilities (Tier II facilities) are required by the EPA to submit their information via electronic format to the Regional Emergency Planning Committee (REPC) annually. The FRCOG is responsible for importing that data and submitting the information. The FRCOG is also responsible for creating localized maps of facilities and surrounding critical infrastructure (such as schools, hospitals and bridges) using Pictometry software. Pictometry is an aerial software program that allows users to use existing map data layers with aerial photos. Aerial photos are used to determine the exact location of each facility along with GPS coordinates. Two maps are then created, a town wide map showing all the Tier II facilities within the town and an aerial photo map of each Tier II facility. The maps also contain critical information regarding the types and quantities of the chemicals stored at the facility. The localized aerial photo map depicts the evacuation and isolation zones if a chemical release were to occur.

³The Franklin County Local Emergency Planning Committee (LEPC) was renamed the Franklin County Regional Emergency Planning Committee (REPC) in 2007.

Each chemical has a different evacuation zone depending on the chemical makeup. Finally, a third county-wide map is created illustrating all the major roads and rail lines that are used to transport chemicals, which shows critical infrastructure and its proximity to sites that house hazardous materials. This mapping and evacuation information is used by the REPC to create emergency response plans.

Natural Hazard Mitigation Planning

Since 2002, the FRCOG has worked with twenty-three Franklin County towns to create local natural hazard mitigation plans. The FRCOG has also developed the Franklin County Regional Natural Hazards Mitigation Plan which is updated annually with a formal update every three years). The creation of the hazard mitigation plans has been funded through grants from the Massachusetts Emergency Management Agency (MEMA) and the Massachusetts Department of Conservation Services (DCS). The creation of the hazard mitigation plans has been overseen by the Franklin County Regional Emergency Planning Committee (REPC). The REPC is responsible for preparing an All Hazards Plan for the region, and the Regional Natural Hazards Mitigation Plan is an important component of the All Hazards Plan.

The Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) define hazard mitigation as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards such as flooding, snow and ice storms, high winds, hurricanes, wildfires, earthquakes, tornadoes, micro-bursts, ice jams, landslides and wildfires. Mitigation efforts undertaken by communities can help to minimize damage to: infrastructure, such as roads, sewers, utility transmission lines, and water supplies; buildings; and natural, cultural, and historic resources.

Planning efforts like the creation of the Regional Natural Hazards Mitigation Plan focus on pre-disaster planning and the mitigation of potential hazards. Pre-disaster planning emphasizes actions that can be taken before a natural disaster occurs. Future property damage and loss of life can be

reduced or prevented by a mitigation program that addresses the unique geography, demography, economy, and land use of a region within the context of each of the specific potential hazards that could threaten the region.

Currently, the FRCOG Planning Department is working to update the Regional Natural Hazard Mitigation Plan for Franklin County, which expired in June, 2010. Staff will be working closely the Franklin County Regional Emergency Planning Committee (REPC) during the plan update process. The REPC, which includes representatives from all 26 Franklin County towns, has chosen an "all hazards" approach to emergency planning. This approach addresses planning for hazardous materials emergencies as well as other natural, technological, and man-made events that call for a similar inter-town, inter-disciplinary response. FRCOG staff and the REPC will be carefully reviewing and updating the key strategies and recommendations in the 2005 Regional Natural Hazard Mitigation Plan.

For the ongoing 2010 update of the 2005 regional and local natural hazard mitigation plans, the FRCOG is in the process of collecting data and compiling research on nine hazards: flooding, winter storms, hurricanes, tornadoes, wildfires, earthquakes, ice jams, landslides and dam failures. The FRCOG will also update the region-wide maps of critical facilities including schools, hospitals, shelters, police and fire stations, emergency operations centers, major roads and bridges. The FRCOG will examine the spatial relationships between the identified hazards and the critical facilities. For example, where are schools located in relation to natural hazards such as flooding or inundation areas resulting from dam failures? What roads and bridges are most likely to become impassable during a severe winter storm or if area rivers flood? The updated plan will then identify and assess the policies, programs, and action items that the region can implement to protect against future disaster damages, and established goals for this implementation.

The major vulnerabilities to the transportation network and transportation access identified in the 2005 Regional Natural Hazards Mitigation Plan concern two main hazards: flooding and severe winter storms.

Flooding and Evacuations

Franklin County has several major rivers and numerous tributaries which are susceptible to annual flood events. The major rivers in the region include the Connecticut, the Deerfield, and the Millers. Some of the tributaries to these rivers which are prone to flooding include the Green River and the Sawmill River. The FRCOG is updating maps for each town in Franklin County showing which roads are the most likely to flood. These maps have just recently become very important due to the severe and widespread flooding that resulted from Hurricane Irene in August of 2011.

The dam projects in the region, while reducing the year-to-year risk from flooding, have also introduced a different type of risk: catastrophic flooding resulting from dam failures. While the risk of dam failures is low, the consequences are disastrous. The Regional Natural Hazard Mitigation Plan will include updated maps of the areas of inundation from dam failures and estimates of the maximum amount of time available for evacuations. One issue with evacuations is the potential flooding of roadways and washing out of bridges along the planned evacuation routes.



Flooding and Road Damage from Hurricane Irene, 2011

The Massachusetts Department of Conservation and Recreation (DCR) regulates the dams in the state. According to the DCR office of Dam Safety, there are nineteen High Hazard dams in Franklin County, which are defined as dams at which dam failure will likely result in loss of life and serious damage to homes, important public utilities, highways, railroads, or industrial or commercial facilities. Franklin County is also at risk from major dams upstream in Vermont and New Hampshire, such as the Harriman Dam, which was discussed earlier. The FRCOG has requested updated GIS datalayers of inundation areas from Trans Canada, the owner of the Harriman Dam, and the US Army Corps of Engineers and will seek funding to develop evacuation plans for schools and other critical facilities located in those areas.

Severe Winter Storms

Severe snow and ice storms disrupt regional transportation routes, and in some instances essential utilities such as electricity. State and local highway departments are well prepared to clear snow and treat icy road conditions. However, given the significant amount of road miles in Franklin County, including many unpaved roads, this can take a long time. The risk of injury is particularly increased if the weather conditions are poor during commuting hours or during the times that school buses are trying to bring children home. For reducing motor vehicle crashes during storms and to provide access for emergency vehicles, the Regional Hazard Mitigation Plan recommends that towns should discourage development on roads with slopes in excess of 10 percent. The plan also suggests that towns can promote the installation of underground utilities to reduce power outages and downed power lines in roadways, by including underground utilities installation as a requirement for new development, particularly in residential subdivisions. Recommendations for regional actions include having the REPC or FRCOG distribute model subdivision regulations to all Franklin County towns to limit the steepness of new roads, and model driveway regulations for new construction to prevent runoff and icing on roads. Another recommendation is to identify and investigate potential alternative modes of transportation for

work commutes for emergency personnel and employees at critical facilities such as hospitals and nursing homes during severe winter storms.



The aftermath of the 2008 ice storm

Other Key Strategies and Recommendations of the Regional Natural Hazards Mitigation Plan

The Regional Natural Hazards Mitigation Plan also contains a number of other strategies and recommendations, some related to emergency planning in general. Key strategies and recommendations include the following:

- Improve hazard assessment information to direct development away from areas that are vulnerable to natural hazards;
- Develop an outreach program to increase public awareness of the risks associated with natural hazards;
- Identify locations for evacuation shelters for large-scale emergencies;
- Support regional and local planning efforts to mitigate natural hazards;
- Support current regional committees' activities to increase collaboration and coordination among public agencies, non-profit organizations, and businesses; and
- Coordinate and integrate natural hazard mitigation activities as appropriate with emergency operations and plans; make the natural hazard and risk assessment mapping from the Regional Natural Hazards Mitigation Plan available to emergency responders and planning officials.

Security of Transportation Facilities

Public Airports

Since September 11, 2001, greater attention has focused on security at the nation's major airports. In Massachusetts, attention to airport security has included the state's small airports as well. The MassDOT's long-range transportation plan, *A Framework for Thinking (2006)* indicates that "Massachusetts was the first state to bring forth security regulations, and is still leading the country, on security issues for small airports" (page 202).

The Massachusetts Aeronautics Commission (MAC) oversees and regulates the public-use airports in Massachusetts, excluding Logan and Hanscom Airports. There are two public-use airports located in Franklin County. They are the Turners Falls Municipal Airport in Montague, and the Orange Municipal Airport in Orange. Both airports are classified as "general aviation" airports, which means that they have no scheduled passenger or freight air service. They provide facilities for privately-owned personal and corporate aircraft, and are also used for a variety of other aviation activities, such as flight instruction, charter services, aerial photography, parachuting and similar activities.



Aerial view of the Turners Falls Airport

Since 2001, the MAC has established a number of policies and programs to increase airport security. The MAC has funded security enhancements at municipal airports including security fencing, access control systems, and video monitoring. The MAC has also implemented a statewide badge program for aircraft users and airport tenants, and all badges have been entered into centralized state database.

Additionally, the MAC now requires that each public-use airport develop and implement an airport security plan, and that the plan be consistent with MAC security guidelines and regulations.

Both the Orange Municipal Airport and the Turners Falls Municipal Airport have created airport security plans for their facilities. They have both implemented the use of badges for aircraft users, and have made security improvements onsite, including new perimeter fencing and gates at vehicle access points. The Orange Municipal Airport manager also indicated to the FRCOG that the Orange Airport has improved lighting in high security areas; the airport staff meets regularly with local law enforcement officials to discuss airport security issues, and the local police have increased the number of their patrols to the airport during the day and evening.

Regional Transit Center

The Regional Transit Center in downtown Greenfield is currently under construction. Once the transit center is completed, it will help improve transit service and security for bus riders in the region. There are currently no transit centers or indoor facilities for bus riders in Franklin County. The Regional Transit Center will be open during the hours of transit service and will provide a well-lit, sheltered waiting area for riders.



Regional Transit Center under Construction

The Regional Transit Center will serve as a hub for regional transit services that will also provide connections to other transportation modes such as

intercity bus carriers, demand response services, local taxis, and bicycling, walking and soon passenger rail.

Recommendations for Transportation Security

- Continue monitoring **security at the region's two public-use airports**, the Orange Municipal Airport and the Turners Falls Municipal Airport, and to implement additional security measures as necessary.
- Continue working with the FRTA on the **construction of the Franklin Regional Transit Center**, a multimodal facility that will enhance security for transit system users.
- Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to **expand the region's preparedness to manage emergency incidents**, including those that impact the regional transportation network.
- Continue working with the REPC and WRHSAC to **provide training workshops to emergency response personnel** on hazardous materials management and spills.
- Encourage the REPC and WRHSAC to hold additional multi-jurisdictional **exercises for large-scale incident management and evacuations**.
- Continue **maintaining and upgrading information on transportation resources in the region** that can be used in the case of an emergency event, and to encourage the establishment of mutual aid agreements between towns and memorandums of understanding with businesses to facilitate access to those transportation resources when needed.
- With assistance from the REPC and WRHSAC, continue operability and management of the new **radio communications system**.
- Assist MassDOT with the expansion of **Intelligent Transportation System**

infrastructure, including cameras, weather sensors, and variable message signs, along I-91 and Route 2.

- Explore ways in which the enhanced **ITS and telecommunications infrastructure** can be coordinated with the current emergency communications systems and utilized for emergency management.
- Explore options for expanding the **radio communication capabilities** between emergency management personnel and the Franklin Regional Transit Authority.
- Continue working with the REPC and the WRHSAC on **evacuation planning in the region**, including the preparation of evacuation plans for special needs populations.
- Work with the REPC and WRHSAC to identify locations for **evacuation shelters** for large-scale emergencies.
- Assist employers and critical facilities with the creation of plans for continued **operations and employee transportation in the event of an emergency** in the region.
- Develop and distribute **model subdivision regulations** to all Franklin County towns to limit the steepness of new roads, and model driveway regulations for new construction to prevent runoff and icing on roads.
- Develop an outreach program to increase the **public awareness of the risks associated with natural hazards**, and encourage development to locate away from areas that are vulnerable to natural hazards.
- Support regional and local planning efforts to **mitigate natural hazards**; and coordinate and integrate natural hazard mitigation activities as appropriate with emergency planning and operations.
- Develop **evacuation plans for schools and other critical facilities** located in potential inundation areas from a failure of the Harriman Dam.



Scenic Byways and Tourism

15 Scenic Byways and Regional Tourism

Franklin County's rural landscape, varied topography, and rich history combine to make the region especially beautiful and scenic. As an indicator of its picturesque resources, five of the seven scenic byways in Western Massachusetts are located in Franklin County. Four of the county's five scenic byways are state designated and one is a nationally designated byway. The state designated scenic byways are: the Mohawk Trail Scenic Byway (Route 2), the Route 112 Scenic Byway, the Route 116 Scenic Byway, and the Route 122 Scenic Byway. The Connecticut River Scenic Farm Byway (Routes 63 and 47) is a nationally designated scenic byway. The map at the end of the chapter shows the locations of the scenic byways in Franklin County.



View along the Connecticut River Scenic Farm Byway in Sunderland

Because of the high number of scenic byways within Franklin County, a significant amount of FRCOG's transportation and land use activities involve planning for its scenic byways. These activities range from the creation of corridor management plans, land protection, to tourist facility development. Corridor management plans have now been completed for the Connecticut River Scenic Farm Byway (1998), the Mohawk Trail Scenic Byway (western section in 2002 and eastern section

in 2009), and the Route 112 Scenic Byway (2009). In addition, the FRCOG is currently in the process of completing a corridor management plan for Route 122 and funding has been secured to complete a corridor management plan for the Route 116 Scenic Byway.

Scenic Byways Program

Much of the funding for scenic byway planning activities comes from the National Scenic Byway Program. The National Scenic Byway Program recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities. The program provides grants and technical assistance for projects related to:

- Planning, design, or development of a State or Indian tribe scenic byway program;
- Development and implementation of a corridor management plan to maintain the scenic, historical, recreational, cultural, natural, and archaeological characteristics of a byway corridor while providing for accommodation of increased tourism and development of related amenities;
- Safety improvements to a State scenic byway, Indian tribe scenic byway, National Scenic Byway, or All-American Road to the extent that the improvements are necessary to accommodate increased traffic and changes in the types of vehicles using the highway as a result of the designation as a State scenic byway, Indian tribe scenic byway, National Scenic Byway, or All-American Road;
- Construction along a scenic byway of a facility for pedestrians and bicyclists, rest area, turn out, highway shoulder improvement, overlook, or interpretive facility;
- An improvement to a scenic byway that will enhance access to an area for the purpose of recreation, including water-related recreation;
- Protection of scenic, historical, recreational, cultural, natural, and archaeological resources in an area adjacent to a scenic byway; and
- Development and implementation of a scenic byway marketing program.

To be eligible for funding under the national program, a byway must be officially designated as a scenic byway by the State and a corridor management plan must be completed which identifies the future goals and vision for the byway. The corridor management plan is developed through an extensive public participation process that includes the formation of a byway committee composed of residents, town officials, business owners, historical commissions and recreational users from the byway area. The goal is to identify mechanisms to protect the scenic value of the byway while promoting the byway's tourism potential.

Existing Scenic Byways in Franklin County

The following section describes each of Franklin County's scenic byways. The section also details associated projects that have been completed or are upcoming for each of the byways.

Connecticut River Scenic Farm Byway

In Franklin County, the Connecticut River Scenic Farm Byway travels along Route 63 in the Towns of Northfield, Erving, and Montague and Route 47 in Montague and Sunderland. The byway travels through the heart of the Connecticut River Valley, a landscape of distinct natural beauty with classic New England farm village patterns. Along the byway corridor, there are many sites and resources that highlight the rich history of the area dating back to the 1600s and the early inhabitation by Native Americans and Colonial settlers. The history and farming heritage that shaped the corridor is still evident today. The byway also functions as several towns' and villages' main street as it travels through the region. The Connecticut River Valley's rich history is reflected in the many surviving architectural resources that can be seen along the way.

The Franklin County section of the byway (Northfield, Erving, Montague, and Sunderland) was officially designated as a state scenic byway by the Massachusetts Legislature in 2000, and the Hampshire County section of the byway (Route 47 in Hadley and South Hadley) was designated in 2003. In 2009, the Connecticut River Scenic Farm

Byway was also designated as a National Scenic Byway. This is the first byway in Massachusetts to be designated as a National Scenic Byway and remains the only nationally designated scenic byway in the Commonwealth (all of the other byways are state designated scenic byways). This national designation represents an additional level of recognition and technical support from the National Scenic Byway Program. Nationally designated byways are included in scenic byway maps, brochures, and a website published and hosted by the National Scenic Byway Program. The New Hampshire and Vermont section of the Connecticut River Byway was designated as a National Scenic Byway in 2005.

Completed Projects

Corridor Management Plan

A corridor management plan was completed for the Connecticut River Scenic Farm Byway in November 1998. The *Connecticut River Scenic Farm Byway Corridor Management Plan* adopted recommendations and priorities for promoting economic opportunities while protecting the natural, cultural, and historic resources of the byway. Since the completion of the corridor management plan and the official designation of the route as a scenic byway, the FRCOG has worked to implement the recommendations of the *Connecticut River Scenic Farm Corridor Management Plan*. To date, a number of recommended projects and programs have received funding and are in varying stages of implementation.

Sunderland Scenic Turnout Area Improvements

During 2009, improvements were completed at the scenic turnout area located on Route 47 in Sunderland. The FRCOG worked with the Town of Sunderland, Stantec Inc. and Urban Forestry Solutions to design improvements to the existing turnout area to the south of Falls Road. This project was a recommendation of the *Connecticut River Scenic Farm Byway Corridor Management Plan* (1998). A paved turnout area already existed in this location that was part of the old road, but was in need of repair. The work included the resurfacing of the paved area of the turnout, improvements to the

entrance/exit to enhance visibility, the installation of signs specifying when the turnout area is open, installation of a picnic table, and the construction of a kiosk containing information on the town, the Connecticut River Scenic Farm Byway, and the surrounding landscape. The project also included selective tree pruning in order to open up the views of the Connecticut River and Mount Sugarloaf from the scenic overlook area. The construction of the improvements was completed in the Fall of 2009.



The construction of improvements at the Sunderland Scenic Turnout Area

On-going Projects

Land Protection Project

The Connecticut River Scenic Farm Byway Land Protection Project commenced with the execution of a memorandum of understanding (MOU) between MassDOT, the Massachusetts Department of Agricultural Resources (DAR), the Massachusetts Department of Conservation and Recreation (DCR), the Franklin Land Trust, and the FRCOG. The MOU was a critical step in the implementation process and has paved the way for future land protection projects using scenic byway funding. The MOU details the specific steps of the land protection acquisition process and defines the roles of the agencies partnering in the project.

To date, one land protection transaction has been completed and another is in the process of being completed along the Connecticut River Scenic Farm Byway. For the project that has been completed, the

Massachusetts DAR and the Town of Sunderland partnered to permanently protect 109 acres of prime agricultural land on the byway. The land protection project that is in the process of being completed will permanently protect 18 acres of prime agricultural and scenic land on the byway in Northfield and also has frontage directly on the Connecticut River.

An additional \$520,000 in funding was sought and awarded through the fiscal year 2009 National Scenic Byway Program for the Connecticut River Scenic Farm Byway Land Protection Project to complete another high priority land protection transaction. Work is underway to complete this important land protection transaction.

Website Development, Logo Design, Directional Signs and Western Massachusetts Scenic Byways Promotional Campaign

In 2004, funding was approved to develop a logo, directional signs, and a website for the Connecticut River Scenic Farm Byway. Since the time of that award, a number of other marketing-related projects for other state designated scenic byways have also been approved. In an effort to best utilize the money for these similar projects and create a unified marketing approach for all of the byways of Western Massachusetts, the projects have been consolidated into a larger marketing project referred to as the Western Massachusetts Scenic Byway Promotional Campaign. Consequently, the work that was to be completed as part of this project has been included in this broader Western Massachusetts Scenic Byways Promotional Campaign scope that will encompass all of these related projects. The Western Massachusetts Scenic Byway Promotional Campaign is a collaborative effort of the Berkshire Regional Planning Commission (BRPC), Central Massachusetts Regional Planning Commission (CMRPC), FRCOG, and Pioneer Valley Planning Commission (PVPC) and includes developing: marketing tools, logos, way-finding signs, and websites for all seven of the byways in Western Massachusetts. The project is scheduled to begin in 2011.

Future Projects

Tri-state Bicycle Route Mapping Project

The FRCOG and the PVPC are interested in jointly developing and printing a bicycle facility map and other tourist-oriented bicycling information for the tri-state area (Massachusetts, New Hampshire, and Vermont) of the Connecticut River Scenic Byway. The project also includes the development of bicycling route itineraries available in printed format and on-line. The itineraries will provide byway travelers bicycling excursions of varying lengths and levels of difficulty. This task will highlight the many bicycling resources in the greater byway area located in Franklin and Hampshire Counties in Massachusetts and the wealth of off-road and shared roadway bicycling facilities. The project will also be coordinated with the Windham Regional Commission (Vermont), and the Southwest Regional Planning Commission (New Hampshire) in order to provide coordinated information for the byway across state borders.

Ervingside Streetscape Improvements

The Connecticut River Scenic Farm Byway passes through the Town of Erving along Route 63. A one-mile section of this route has been awarded funding to complete the design and construction of sidewalk and streetscape improvements. The project is intended to improve pedestrian access and safety. The project area includes the Erving section of Millers Falls and the adjacent residential neighborhood known as Ervingside. Comprehensive plans for sidewalk and streetscape elements will be developed as part of the project. The improvements will link the previously completed Millers Falls Streetscape improvements with residential neighborhoods, the Erving Library, Veterans Memorial Park, the Erving Elementary School, and the business that are located along Route 63 in Erving. The improvements to be considered for inclusion in the project are pedestrian level lighting, landscaping elements, signs, benches, trash cans, other street furniture and fencing.

Update of the Corridor Management Plan

The *Corridor Management Plan for the Connecticut River Scenic Farm Byway* was completed in 1998. This plan is now more than twelve years old and many of the recommendations that were identified in the plan have been completed. Additionally, the descriptive information that is contained in the report in many cases is outdated. It would be advantageous to complete an update of this plan to update the descriptions of the resources, re-examine the goals and objectives, and review the recommended projects.

Mohawk Trail Scenic Byway

The Mohawk Trail Scenic Byway is one of the earliest scenic byways in New England – receiving its designation in 1953. The byway travels on Route 2 through Berkshire, Franklin, and Worcester counties. In Franklin County, the byway travels through the Towns of Charlemont, Buckland, Shelburne, Greenfield, Gill, Erving, and Orange. The western section of the byway (Williamstown to Greenfield) follows the east-west route first used by Native Americans between the Hudson River and the Connecticut River Valleys. The route continued to be used for travel by colonists and eventually was upgraded to support subsequent forms of transportation. The western section of the byway was the first state road to be designated and constructed as a scenic tourist route, opening amid much fanfare in 1914.



Mohawk Trail Scenic Byway in Charlemont

The eastern section (Greenfield to Athol) also first developed as a foot path of the Native Americans. The Europeans from the Connecticut River Valley

later used this trail to settle the northern interior of Massachusetts and for commerce by horse and cart. Later, entrepreneurs from the cities in eastern New England built the Fifth Massachusetts Turnpike along much of the original pathway. During this development, the road was changed and improved to accommodate new modes of transportation and infrastructure.



Eastern Section of the Mohawk Trail (in Erving)

Completed Projects

Corridor Management Plans

Corridor management plans were completed for the western section of the byway (Williamstown to Greenfield) in 2002 and the eastern section (Greenfield to Athol) in 2009. The two corridor management plans include inventories of the historic, cultural, and natural resources; scenic landscape assessments; inventories of the heritage and recreational attractions; evaluations of the existing land use regulations and resource protection measures for the towns along the byway; and lists of recommended future actions that are intended to balance future growth with the preservation of the byway's resources.

The study area for the corridor management plans included the byway and a half mile buffer area along each side of the road. In Franklin County, the corridor management plan for the western section included Route 2 in Charlemont, Buckland, Shelburne and Greenfield as well as the section of Route 2A that travels through Shelburne Falls. The corridor management plan for the eastern section

of the Mohawk Trail included Route 2 within the Towns of Greenfield, Gill, and Erving and Route 2A through downtown Greenfield, Orange, and Athol. The plan also included the Towns of Montague and Wendell because the half-mile study area falls within these towns even though the byway itself is located outside of the town borders. The total length of the western section of the byway in Franklin County is 22 miles and the eastern section of the Byway is 29 miles. In both cases, the plan development process included an active public participation process in which the FRCOG worked closely with a Byway Committee comprised of municipal officials, landowners, business owners, and interested citizens. To date, funding has been secured to complete a number of projects on the Mohawk Trail Scenic Byway that were recommended in the corridor management plans.

Mohawk Trail Facility Improvement Project

The Mohawk Trail Facility Improvement Project was completed during 2010. As part of this project historic signs were purchased and installed, vista pruning was completed, and two informational kiosks were designed and installed. Work was also completed in collaboration with the Town of Charlemont to determine a location for kayak/canoe river access locations. This analysis was completed and the town decided not to move forward with implementation at this time (funding for the implementation was not included in this project scope and funding).



The new information kiosk and picnic tables at the Shunpike Rest Area in Charlemont

On-going Projects

Land Protection Project

The Mohawk Trail Land Protection Project also commenced with the execution of a memorandum of understanding (MOU) between MassDOT, DAR, DCR, the Franklin Land Trust, and the FRCOG as detailed previously. Two land protection transactions have been completed to date, which have protected approximately 130 acres along the Mohawk Trail Scenic Byway in Charlemont. An additional \$936,000 in funding was sought and awarded through the Fiscal Year 2009 National Scenic Byway Program for the Mohawk Trail Land Protection Project to complete four additional high priority land protection transactions. Work is underway to complete the transactions.

Mohawk Trail and Western Massachusetts Byways Promotional Campaign

In 2003, funding was approved to complete a marketing plan for the western section of the Mohawk Trail Scenic Byway. Since the time of that award, all of the byway marketing projects have been consolidated into the larger marketing project referred to as the Western Massachusetts Scenic Byway Promotional Campaign. Consequently, the work that was to be completed as part of the Mohawk Trail Scenic Byway Marketing Project has been included in a broader Western Massachusetts Scenic Byways Promotional Campaign scope that will encompass all of these related projects. As stated previously, the Western Massachusetts Scenic Byway Promotional Campaign is a collaborative effort of the BRPC, CMRPC, FRCOG, and PVPC and includes developing marketing tools, logos, way-finding signs, and websites for all seven of the byways in Western Massachusetts. The project is scheduled to get underway in early 2011.

Improvements at the Upper Pioneer Valley Visitors Center in Greenfield

Fiscal Year 2004 funding was approved for improvements at the Upper Pioneer Valley Visitors Center in Greenfield. This project funds the design and construction of traveler amenities at the Visitor Center that is located on Miner Street in Greenfield (near the rotary at the Interstate 91 interchange).

The project will design and construct a pavilion or canopy to provide shade over the picnic area outside of the existing Visitor's Center to allow more comfortable use of this area during the summer. In addition, the design and construction of a children's interactive interpretive display/play area that incorporates an educational component on the Mohawk Trail is included. This project has been funded, but the proposed scope has not moved forward yet.

Future Projects

Tourism Resources in Downtown Orange

Future funding will be sought to complete three key tasks to support and create byway tourism resources in downtown Orange located on the Mohawk Trail Scenic Byway. The first task includes the completion of a *Tourism Action Plan* which will select a location for a byway waypoint information center in downtown Orange. This project also proposes to construct a parking area located at a central downtown site (next to the Putnam Hall building). The parking area will serve byway travelers and will include the installation of a kiosk which will provide information on the byway area resources. In addition, the development of a focused map for Orange and Athol (the neighboring byway town) will provide information on the attractions and services available in the area.

Mohawk Trail Scenic Byway Land Protection Project

Additional funding will also be sought for three high priority land protection purchases along the Mohawk Trail Scenic Byway.

Route 112 Scenic Byway

The Route 112 Scenic Byway was officially designated as a scenic byway by the Massachusetts Legislature in 2004. The Route 112 Scenic Byway travels through the Towns of Colrain, Buckland, Shelburne, and Ashfield in Franklin County and the Towns of Goshen, Cummington, Worthington, and Huntington in Hampshire County. It travels through historic town centers, working farms, scenic rivers, and majestic forests with beautiful mountains providing a backdrop. The corridor is rich in natural, cultural, and historic resources. In addition, the

byway intersects with the Mohawk Trail Scenic Byway to the north and the Jacob's Ladder Trail to the south – two other state designated scenic byways.



Route 112 Scenic Byway in Ashfield

Completed Projects

Corridor Management Plan

A corridor management plan for the Route 112 Scenic Byway was completed in 2009. The study area for the project includes a one half mile buffer strip along each side of the byway road. The total mileage for the corridor is approximately 51 miles. The purpose of the plan is to recognize, interpret, preserve, and promote the unique scenic, cultural, archeological, natural, and recreational resources of this route.

The more specific objectives of this plan are to: identify and develop strategies to preserve the unique resources along the byway; expand economic opportunities related to agricultural, heritage, and recreational tourism; plan for a byway roadside educational program promoting the history of the land along the Route 112 corridor; develop a land protection program for scenic and historic landscapes; and develop a recreational program which identifies and establishes linkages to the Mohawk Trail and Jacob's Ladder Trail Scenic Byways, hiking trails, state forests, river access points and other cultural and recreational features along the byway. The Route 112 Scenic Byway Corridor Management Plan was a cooperative project of the eight byway communities, the FRCOG, the PVPC, and MassDOT. Development of

the plan was guided by two advisory committees, one in each region (Hampshire and Franklin Counties) of the byway, and incorporated an extensive public participation process.

On-going Projects

Western Massachusetts Scenic Byways Promotional Campaign

The Route 112 Scenic Byway is included in the scope of the Western Massachusetts Scenic Byway Promotional Campaign. As part of that project, a coordinated promotional campaign will be developed for all seven of the byways in Western Massachusetts. This work will include the development of marketing tools, logos, way-finding signs, and websites for all of the byways. The project is scheduled to begin in 2011.

Future Projects

Land Protection Project

Funding was sought and obtained for two high priority land protection purchases along the Route 112 Scenic Byway through the Fiscal Year 2010 National Scenic Byway discretionary grant round.

Route 116 Scenic Byway

In 2008, the Massachusetts Legislature designated Route 116 in the Towns of Deerfield, Conway, Ashfield, Plainfield, Savoy, and Adams as a scenic byway. The byway travels 38.8 miles from the Deerfield/Sunderland town line (at the Connecticut River and near the Connecticut River Scenic Farm Byway) to downtown Adams at the intersection of Route 116 and Route 8. In Deerfield, the byway route follows the historic route of Route 116 (the current Route 116 bypass was constructed in the 1960s) onto Sugarloaf Street through historic South Deerfield Center onto Elm Street and north onto Routes 5/10/116. The corridor is rich in natural, scenic, cultural and historic resources. The byway rejoins Route 116 to the west of South Deerfield Center and travels west to historic Conway Center which is characterized by historic architecture and a small town atmosphere. The byway also travels past the Burkeville Covered Bridge which is on the National Register of Historic Places and has recently

been restored. Route 116 continues west through historic Ashfield center, where it intersects with Route 112, which is also a designated scenic byway.

Completed Projects

No projects have been completed along this newly designated byway to date.

On-going Projects

Corridor Management Plan

Funding was sought and awarded through the Fiscal Year 2009 National Scenic Byway Program to complete a corridor management plan for Route 116. It is anticipated that this project will begin in 2011. The development of the corridor management plan will be a multi-regional collaborative effort including the BRPC, FRCOG, and the PVPC. The scenic byway route travels through Franklin County (Deerfield, Conway and Ashfield), Hampshire County (Plainfield), and Berkshire County (Savoy and Adams). Completing a corridor management plan will qualify the scenic byway to apply for additional funding for eligible projects along the byway.



The Route 116 Scenic Byway in Conway

Future Projects

There are no future projects planned until the corridor management planning process and the associated public participation has been completed.

Route 122 Scenic Byway

In 2005, the Massachusetts Legislature designated Route 122 in the Towns of Paxton, Rutland,

Oakham, Barre, Petersham, Orange, and New Salem as a scenic byway.

The byway travels from the Paxton/Worcester town line to downtown Orange. Paxton, Rutland, Oakham, Barre, and Petsham are in Worcester County, and New Salem and Orange are in Franklin County. In downtown Orange, the byway terminates at the intersection of Route 122 and Route 2A which is part of the eastern section of the Mohawk Trail Scenic Byway. In Franklin County, the byway travels along the northern end of the Quabbin Reservoir, an area of great natural beauty. The route also travels into downtown Orange which is characterized by its late 19th Century architecture and industrial heritage. The Central Massachusetts Regional Planning Commission (CMRPC) has completed a corridor management plan for the Worcester County section of the trail.



Route 122 Scenic Byway in New Salem

Completed Projects

Funding was obtained through a Fiscal Year 2007 National Scenic Byway grant application to complete a corridor management plan.

On-going Projects

Corridor Management Plan

The FRCOG is currently completing a corridor management plan for the Franklin County section of the byway in New Salem and Orange. The study area includes Route 122 in Orange and New Salem and a half mile buffer on each side of the road from its intersection with Route 2A (the Mohawk Trail

Scenic Byway) in downtown Orange through New Salem and north of the Quabbin Reservoir. The project area ends at the town border of New Salem and Petersham. The corridor management plan will be completed June 30, 2011. The plan is intended to help guide future byway-related activities and projects. The work will include: the completion of inventories of the historic, cultural, and natural resources; a scenic landscape inventory and assessment; an identification of heritage and recreational tourism-related attractions and support services; and an evaluation of the land use regulations and resource protection measures that are in place. An implementation strategy will be developed to identify and prioritize potential projects and/or improvements for which funding may be sought through the Scenic Byway Program in the future. By completing a corridor management plan, this section of the byway will be eligible to apply for project funding through the National Scenic Byway Program.

Future Projects

There are no future projects planned until the corridor management planning process and the associated public participation has been completed.

Transportation Related Regional Tourism

Regional tourism is an important consideration when discussing transportation and travel in Franklin County. The region is rich in scenic, natural, cultural, and historic features that are appealing to travelers. Tourism also plays an increasingly important role in the region's economy. The Massachusetts Office of Travel and Tourism (MOTT) estimated that in 2009 domestic travelers in Franklin County spent over \$47 million (source: *MOTT's Economic Impact of Travel on Massachusetts Counties, CY2009*). Consequently, visitors to the area are an important part of the local economy and important to the economic viability of the region.

The following section provides some details of the numerous tourism-related features in the region. These resources are important to consider as part of comprehensive transportation planning activities.

Scenic Byway Related Tourism

There are scenic, natural, recreational, historic, and cultural resources along the byways that appeal to a wide range of interests. Byway travelers experience a diverse landscape that includes the classic mill towns of New England, rolling hills, rural farmland, mountains, river valleys, and spectacular vistas. Franklin County is rich in natural resources and the byways pass through the most scenic areas. The byways travel to a variety of outdoor activities ranging from hiking, picnicking, kayaking, canoeing, fishing, to skiing. The architecture and historic resources along the byways are also diverse and each has a unique history that is representative of different points in our history. In addition, there are many artisans who currently live and work in the area, and provide opportunities to experience their crafts. The byways of Franklin County provide a region-wide network for travelers to explore these diverse and rich resources.

To assist the traveling public, it is important that information and services are available to them. Information including publications, brochures, maps, websites, and telephone numbers are crucial to encouraging tourism along the scenic byways. The corridor management plans for the scenic byways contain an inventory of the cultural, historical, natural, scenic, recreational, and commercial resources within each byway area. Projects are currently underway to enhance information resources available to byway travelers. Additionally, the corridor management plans identify recommended future projects to encourage visitors to the area.

Bicycle Tourism

During 2009, the FRCOG updated the Franklin County regional bikeway plan. As part of this update, the topic of bicycle-related tourism was discussed. The significance of bicycle tourism and the number of people who travel to Franklin County to bicycle was emphasized during the public input sessions for this update. Consequently, bicycle-related tourism was included in the *2009 Franklin County Bikeway Plan Update* and is part of the long term bicycle network plan for the region. Touring by bicycle was considered as new routes were

planned. The *Franklin County Bikeway Plan Update* included the following two goals related to bicycle tourism: 1) encourage bicycling as a regional tourism activity and complete measures which will identify Franklin County as a great place to come and bicycle, and 2) identify bicycle routes that could encourage tourism throughout Franklin County. During the public outreach sessions for the *Bikeway Plan Update*, it was noted that there already is a significant amount of tourism to the region that is related to bicycling activities due to the rural roads, low traffic volumes, beautiful scenery, and the opportunities to ride on roads that are challenging if one chooses to do so. In its June 2010 edition, the New England-focused *Yankee Magazine* promoted the Canalside Trail, part of the Franklin County Bikeway, as the best urban bike path in Massachusetts. The county has several long-term established popular bicycling events, such as the Deerfield Dirt Road Randonee, that help attract tourists to the area. This particular event has been occurring since the 1990's and directly benefits the Franklin County Land Trust, with many indirect benefits to vendors and the local towns.

The following recommendations related to bicycle tourism were included in the *Bikeway Plan Update*:

- Provide information and resources to encourage tourism opportunities related to bicycling throughout the county.
 - Create promotional materials for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to use in their promotional campaigns.
 - Encourage the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) organizations to include information on bicycling in Franklin County in their tourism materials.
 - Create advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County.

Tourism by bicycle was also included in the *2008 Massachusetts Bicycle Transportation Plan*. One of

the goals of this statewide plan is to “develop bicycle tourist publications through the Massachusetts Office of Travel and Tourism (MOTT).” This goal was also considered during the development of the *2009 Franklin County Bikeway Plan Update*, and will be included as future bicycle facility planning is completed.

The FRCOG has already created some bicycling informational resources in the form of bicycling maps of the county. The maps highlight the Franklin County Bikeway routes (both off-road bike paths and shared roadway sections), the services along the way, and other information that may be helpful to cyclists. The maps classify each route as novice, intermediate, or advanced in order to help prospective bicyclists to determine the most suitable route to ride given their ability and physical fitness level. The maps also include information on the services that are available along the routes, and other information that may be helpful to cyclists, such as locations to get water and elevation changes along the various routes.

Promotion of Regional Tourism

In general, Franklin County has many resources that make it a wonderful place to explore. The natural and cultural resources in the region provide many benefits to residents and visitors to the region. Currently, local business people and economic development practitioners are focusing efforts on particular niches of the tourism industry, such as agri-tourism, eco-tourism, heritage tourism, and cultural tourism related to artists and craftspeople. Offerings such as farm stands, maple sugar houses serving pancakes, and other forms of interactive experiences are growing in the agricultural industry of Franklin County. Many farms have increased the number of customers and their profit margins while diversifying their revenues by offering farm-related products and activities that would appeal to tourists. Eco-tourism activities include outdoor recreation such as rafting and skiing. There are also education-related opportunities, like guided nature hikes that are available in the region. There are many heritage and cultural tourism assets including established attractions, such as Historic Deerfield, as well as particular events, such as “Cider Days.”

Business activities that rely on natural and historical resources help to preserve these assets and the region's rural character.

A recent analysis of economic data demonstrated that there is a higher proportion of artists in Franklin County, relative to other areas of the state – creating a thriving “creative economy.” Concentrations of photographers, potters, glassblowers and woodworkers have been identified in the region. Franklin County is fortunate in that there are also assets specific in the region that support this portion of the economy, including entities that provide training in the arts, such as the Hallmark Institute of Photography, and conduct activities and services to help grow the market, such as RiverCulture and North Quabbin Woods.

Recommendations for Scenic Byways and Tourism

Scenic Byway Related

- Continue work to **permanently protect scenic and agricultural lands** along the scenic byways by purchasing conservation restrictions and/or agricultural preservation restrictions from willing landowners.
- Complete an update of the corridor management plan for the **Connecticut River Scenic Farm Byway**.
- Continue work to develop initiatives to **market the byways of Western Massachusetts** as a travel destination.
- Work with the other planning regions and state planning offices in New Hampshire and Vermont to develop a **tri-state bicycle route map** for the Connecticut River Scenic Farm Byway.
- **Implement the recommendations** of the corridor management plans for each of the scenic byways.

Tourism Related

- Develop **marketing and informational resources** to promote Franklin County as a travel destination.
- Provide information and resources to encourage **tourism opportunities related to bicycling** throughout the county.
- Create **promotional materials** for the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) to use in their promotional campaigns.
- Encourage the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) organizations to include **information on bicycling** in Franklin County in their tourism materials.
- Create **advertisements to be used in bicycling magazines and websites** promoting bicycling in Franklin County.



Air Quality Conformity Determination

16 Air Quality Conformity Determination

The 1990 Clean Air Act Amendments (CAAA) require Metropolitan Planning Organizations within ozone nonattainment areas to perform air quality conformity determinations prior to the approval of Regional Transportation Plans (RTPs) and Transportation Improvement Programs (TIPs). Conformity is a way to ensure that federal funding and approval goes to those transportation activities that are consistent with air quality goals. This section presents information and analyses for the air quality conformity determination for the 2012 Regional Transportation Plan of the Franklin Regional Transportation Planning Organization (TPO), as required by Federal Regulations 40 CFR Parts 51 and 93, and the Massachusetts Conformity Regulations (310 CMR 60.03). This information and analyses include: regulatory framework, conformity requirements, planning assumptions, emissions budgets, and conformity consultation procedures.

Background

The Commonwealth of Massachusetts is classified as serious nonattainment for ozone, and is divided into two nonattainment areas. The Eastern Massachusetts ozone nonattainment area includes Barnstable, Bristol, Dukes, Essex, Middlesex, Nantucket, Norfolk, Suffolk, and Worcester counties. Berkshire, Franklin, Hampden, and Hampshire counties comprise the Western Massachusetts ozone nonattainment area. With these classifications, the 1990 Clean Air Act Amendments (CAAA) required the Commonwealth to reduce its emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), the two major precursors to ozone formation to achieve attainment of the ozone standard.

A prior conformity determination for all RTPs occurred in 2007, when the Federal Highway Administration (FHWA) – in consultation with the

Environmental Protection Agency (EPA New England) and the Massachusetts Department of Environmental Protection (DEP) – confirmed that all 13 of the RTPs for the year 2007 in Massachusetts were in conformity with the Massachusetts State Implementation Plan (SIP). A summary of major conformity milestones in recent years is as follows:

Between 2003 and 2006, several new conformity determinations were made that were triggered by various events, including: The 2003 regional transportation plans, a change in designation from the one-hour ozone standard to an eight-hour ozone standard, and various changes to regional TIPs that involved reprogramming transportation projects across analysis years.

In 2007, air quality analyses were conducted on behalf of all the 2007 Regional Transportation Plans (RTPs), the purposes of which were to evaluate the RTPs' air quality impacts on the SIP. Conformity determinations were performed to ensure that all regionally significant projects were included in the RTPs. The Massachusetts Department of Transportation found the emission levels from the 2007 Regional Transportation Plans to be in conformance with the SIP.

On April 2, 2008, EPA found that the 2008 and 2009 motor vehicle emissions budgets (MVEBs) in the January 31, 2008 Massachusetts 8-hour ozone State Implementation Plan revision were adequate for transportation conformity purposes. The submittal included 2008 and 2009 MVEBs for the Boston-Lawrence-Worcester (Eastern Massachusetts) and Springfield (Western Massachusetts) 8-hour ozone nonattainment areas. Massachusetts submitted these budgets as part of the 8-hour ozone attainment demonstration and reasonable further progress plan for both nonattainment areas, and as a result of EPA's adequacy finding, these budgets were required to be used for conformity determinations. EPA later determined (in 2010) that only the most recent MVEBs - 2009 - be used for future conformity determinations.

In 2010, air quality analyses were conducted on behalf of all the 2011-2014 Regional Transportation

Improvement Programs (TIPs), the purposes of which were to evaluate the TIPs' air quality impacts on the SIP. Conformity determinations were performed to ensure that all regionally significant projects were included in the TIPs. The Massachusetts Department of Transportation found the emission levels from the 2011-2014 TIPs to be in conformance with the SIP. On November 15, 2010, EPA confirmed that both the Eastern and Western Massachusetts Non-Attainment areas collectively demonstrated transportation conformity, with concurrence from Massachusetts DEP on 11/23/10. On December 22, 2010, FHWA and FTA determined that the TIPs were in conformity with the Clean Air Act and the EPA conformity regulations (40 CFR Part 51).

Conformity Regulations

The CAAA revised the requirements for designated MPOs to perform conformity determinations by ozone non-attainment area for their RTPs and TIPs.

Section 176 of the CAAA defines conformity to a State Implementation Plan to mean conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of the standards. The Franklin County TPO must certify that all activities outlined in the 2012 Franklin Regional Transportation Plan:

- Will not cause or contribute to any new violation of any standard in any area
- Will not increase the frequency or severity of any existing violation of any standard in any area
- Will not delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area

The federal conformity regulations from EPA set forth requirements for determining conformity of Transportation Plans, Transportation Improvement Programs, and individual projects. The requirements of the conformity analysis are summarized below and will be explained in detail in this conformity determination:

- **Conformity Criteria**
 - Horizon Years

- Latest planning assumptions
- Latest emission model used
- Timely implementation of transportation control measures (TCMs)
- Conformity in accordance with the consultation procedures and SIP revisions
- Public Participation Procedures
- Financially Constrained Document

- **Procedures for Determining Regional Transportation Emissions**

- **The Conformity Test**

- Consistent with emission budgets set forth in SIP
- Contribute to reductions in CO nonattainment areas

In addition, the regulations set specific requirements for different time periods depending on the timeframe of the Commonwealth's SIP submittals to EPA. These periods are defined as follows:

- **Control Strategy Period:** Once a control strategy SIP has been submitted to EPA, EPA has to make a positive adequacy determination of the mobile source emission budget before such budget can be used for conformity purposes. The conformity test in this period is consistency with the mobile source emission budget.
- **Maintenance Period** is the period of time beginning when the Commonwealth submits and EPA approves a request for redesignation to an attainment area, and lasting for 20 years. The conformity test in this period is consistency with the mobile source emission budget.

Horizon Year Requirements

Horizon years for regional and state model analyses have been established following 40 CFR 93.106(a) of the Federal Conformity Regulations. The years for which the regional and state transportation models were run for ozone precursor emission estimates are shown below:

- **2010:** Milestone Year – This year is now being used by the statewide travel demand

model as the new base year for calculation of emission reductions of VOCs and NOx.

- **2016:** Milestone Year and Analysis Year: This year is used to show conformity with the existing emission budgets for ozone precursors in Western Massachusetts.
- **2020:** Analysis Year
- **2025:** Analysis Year
- **2035:** Horizon Year – last forecast year of the regional transportation plan

Latest Planning Assumptions

Section 93.110 of the Federal Conformity Regulations outlines the requirements for the most recent planning assumptions that must be in place at the time of the conformity determination.

Assumptions must be derived from the estimates of current and future population, households, employment, travel, and congestion most recently developed by the TPO. For the 2012 Franklin Regional Transportation Plan and other regional plans, the MassDOT developed a series of forecasts – in cooperation with all the MPOs – that represent the most recent planning assumptions for all of Massachusetts.

Assumptions are based on U.S. Census data, data from the Massachusetts Executive Office of Labor and Workforce Development, MassDOT forecasts, and other sources of information (used directly and indirectly), including the U.S. Bureau of Labor Statistics (BLS).

Transit Operating Policy Assumptions

For the Franklin County TPO, the transit operating policies are the continued primary responsibility of the Franklin Regional Transportation Authority (FRTA), and estimates of present and future ridership are developed by FRTA and MassDOT, using similar methods in place at the time of the last conformity determination.

Latest Emissions Model

Emission factors used for calculating emission changes were determined using MOBILE 6.2, the model used by DEP in determining motor vehicle emission budgets. Emission factors for motor vehicles are specific to each model year, pollutant type, temperature, and travel speed. MOBILE 6.2

requires a wide range of input parameters including inspection and maintenance program information and other data such as anti-tampering rates, hot/cold start mix, emission failure rates, vehicle fleet mix, fleet age distribution, etc. The input variables used in this conformity determination were received from DEP and approved by EPA.

Timely Implementation of Transportation Control Measures

Transportation Control Measures (TCMs) have been required in the SIP in revisions submitted to EPA in 1979 and 1982. All SIP TCMs have been accomplished through construction or through implementation of ongoing programs.

DEP submitted to EPA its strategy of programs to show Reasonable Further Progress of a 15% reduction of VOCs in 1996 and the further 9% reduction of NOx toward attainment of the National Ambient Air Quality Standards (NAAQS) for ozone in 1999. Within that strategy there are no specific TCM projects. The strategy does call for traffic flow improvements to reduce congestion and, therefore, improve air quality. Other transportation-related projects that have been included in the SIP control strategy are listed below:

- Enhanced Inspection and Maintenance Program
- California Low Emission Vehicle Program
- Reformulated Gasoline for On- and Off-Road Vehicles
- Stage II Vapor Recovery at Gasoline Refueling Stations
- Tier I Federal Vehicle Standards

Consultation Procedures

The final conformity regulations require that the MPO make a conformity determination according to consultation procedures set out in the federal and state regulations, and the MPO must also follow public involvement procedures established under federal metropolitan transportation planning regulations. The consultation requirements of both the state and federal regulations require that the (Region) MPO (and all other MPOs), MassDOT, Mass. DEP, US EPA - Region 1 and FHWA – Massachusetts Division, consult on the following issues:

- Selection of regional emissions analysis models including model development and assessment of project design factors for modeling
- Selection of inputs to the most recent EPA-approved emissions factor model
- Selection of CO hotspot modeling procedures, as necessary
- Identification of regionally significant projects to be included in the regional emissions analysis
- Identification of projects which have changed in design and scope
- Identification of exempt projects
- Identification of exempt projects that should be treated as non-exempt because of adverse air quality impacts
- Identification of the latest planning assumptions and determination of consistency with SIP assumptions

These issues have all been addressed through consultation among the agencies listed above.

Public Participation Procedures

Title 23 CFR Section 450.322 and 310 CMR 60.03(6)(h) require that the development of the Regional Transportation Plan, TIP, and related certification documents provide an adequate opportunity for public review and comment. Section 450.316(b) also establishes the outline for MPO public participation programs.

Section 450.316(b) establishes the outline for MPO public participation programs. The Franklin Regional Council of Governments' public participation program was formally adopted in July 1994. The development and adoption of this program conforms to the requirements of this section. It guarantees public access to the 2012 Franklin Regional Transportation Plan and all supporting documentation, provides for public notification of the availability of the 2010 Franklin Regional Transportation Plan and the public's right to review the document and comment thereon, and provides a 30-day public review and comment period prior to the adoption of the 2012 Franklin Regional Transportation Plan and related certification documents by the Franklin County TPO.

On August 8, 2011 a public notice was advertised in the *Greenfield Recorder* informing the public of its right to comment on the document. On September 14, 2011, the Franklin County TPO voted to approve the 2012 Franklin Regional Transportation Plan and its conformity determination. This allowed ample opportunity for public comment and Franklin County TPO review of the draft document. These procedures comply with the associated federal requirements.

Financial Consistency

Title 23 CFR Section 450.322 and 40 CFR 93.108 require the 2012 Franklin Regional Transportation Plan to "be financially constrained by year and include a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources."

The 2012 Plan is financially constrained to projections of federal and state resources reasonably expected to be available during the appropriate time frame. Projections of federal resources are based upon the estimated apportionment of the most recent federal authorizations, as allocated to the region by the state or as allocated among the various MPOs according to federal formulae or MPO agreement. Projections of state resources are based upon the allocations contained in the current Transportation Bond Bill and historic trends. Therefore, the 2012 Plan substantially complies with the federal requirements relating to financial planning.

Model Specific Information

40 CFR Part 93.111 of the federal regulations outlines requirements to be used in the network-based transportation demand models. These requirements include modeling methods and functional relationships to be used in accordance with acceptable professional practice and reasonable for purposes of emission estimation. MassDOT, on behalf of the Franklin County TPO, has used the methods described in the conformity regulations in the analysis of this 2012 Regional Transportation Plan.

Highway Performance Monitoring System Adjustments

As stated in EPA guidance, all areas of serious ozone and carbon monoxide nonattainment must use FHWA's Performance Monitoring System (HPMS) to track daily vehicle-miles of travel (VMT) prior to attainment to ensure that the state is in line with commitments made in reaching attainment of the ambient air quality standards by the required attainment dates. MassDOT provided HPMS information to DEP. DEP used this information in setting mobile-source budgets for VOC, NO_x, and CO in all SIP revisions prior to 1997. DEP has since revised its VOC and NO_x budgets using transportation-demand model runs. However, the models must still be compared to HPMS data since HPMS remains the accepted tracking procedure as outlined in the regulations.

The conformity regulations require that all model-based VMT be compared with the HPMS VMT to ensure that the region is in line with VMT and emission projections made by DEP. An adjustment factor that compares the 2010 HPMS VMT to the 2010 transportation model VMT has been developed. This adjustment factor is then applied to all modeled VOC and NO_x emissions for the years 2016 through 2035 to ensure consistency with EPA-accepted procedures.

2010 HPMS VMT

Adjustment factor = 2.434 for Franklin County
2010 Modeled VMT for VOC and NO_x

HPMS adjustment factors, calculated on a regional basis, are applied to the model output of future scenarios, and they change as base-year models are updated or improved, or as HPMS data is revised or updated. The latest factors for Western Massachusetts are contained in Table 16-1.

Changes in Project Design since the Last Conformity Determination Analysis

The Commonwealth requires that any change in project design from the previous conformity determination for the region is identified. Changes that have occurred since

the last conformity determination in 2010 are as follows:

- The modeled base year has changed from 2007 to 2010.
- A new analysis year has been included in the conformity determination. An air quality analysis has been completed for 2016. This complies with EPA's Transportation Conformity Rule Restructuring Amendments (40 CFR Part 93.118, expected to become effective August 2011) which states that "if the attainment date has not yet been established, the first analysis year must be no more than five years beyond the year in which the conformity determination is being made." (2011 base to 2016 analysis year).
- Emission factors have been developed for 2010, 2016, 2020, 2025, and 2035 using Mobile 6.2 with inputs approved by MassDEP and US EPA.
- New HPMS adjustment factors have been developed for the new 2010 base year.

Procedures for Determining Regional Transportation Emissions

The federal conformity regulations set specific requirements for determining transportation emissions, which are estimated from a combination of emission rates, HPMS volume data, and travel demand model projections. Travel demand models use estimates of population, households, and employment to project future travel volumes and patterns. Chapter 4 of the Plan presents these estimates as part of the existing and future regional transportation system.

Table 16 -1: HPMS Adjustment Factors

	2010 HPMS	Travel Demand	HPMS/ Model
REGION	VMT (miles)	Model VMT (miles)	Adjustment Factor
Berkshire	5,168,000	2,150,783	2.403
Franklin	3,541,000	1,454,902	2.434
Pioneer Valley	15,229,000	10,085,310	1.510
Western MA	23,938,000	13,690,995	1.749
State Total	149,481,000	142,159,733	1.052

Only “regionally significant” projects are required to be included in the travel demand modeling efforts. The final federal conformity regulations define regionally significant as follows:

- **Regionally significant:** a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sport complexes, etc., or transportation terminals as well as most terminals themselves) and would be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.

In addition, specific classes of projects have been exempted from regional modeling emissions analysis. The categories of exempt projects include:

- Intersection channelization projects
- Intersection signalization projects at individual intersections
- Interchange reconfiguration projects
- Changes in vertical and horizontal alignment
- Truck size and weight inspection stations
- Bus terminals and transfer points

Previous conformity amendments now allow traffic signal synchronization projects to be exempt from conformity determinations prior to their funding, approval or implementation. However, once they are implemented, they must be included in conformity determinations for future plans and TIPs.

The milestone and analysis year transportation model networks are composed of projects proposed in this RTP. Projects in these networks consist of all in-place regionally significant projects that can reasonably be expected to be completed by a given analysis/horizon year with consideration of available funding commitments. This project group would include, but not be limited to, regionally significant projects where at least one of

the following steps has occurred within the past three years:

- Comes from the first year of a previously conforming TIP,
- Completed the NEPA process, or
- Currently under construction or are undergoing right-of-way acquisition

A complete listing of future regionally significant projects for the entire Western Massachusetts Ozone Non-Attainment Area is provided in Table 16-2. The emissions from the following MPOs have been combined to show conformity with the SIP for the Western Massachusetts Nonattainment Area:

- Berkshire Region MPO
- Franklin Regional Council of Governments*
- Pioneer Valley MPO

* This region does not contain any official urbanized areas, but is considered to be an MPO for planning purposes.

Using the latest planning assumptions, the Massachusetts Department of Transportation, Office of Transportation Planning, estimated the emissions for VOC and NO_x for all areas and all MPOs through a combination of the statewide and selected regional travel demand models (and with assistance from MPO staff). The VOC mobile source emission budget for 2009 for the Western Massachusetts Nonattainment Area has been set at 10.73 tons per summer day and the 2009 mobile source budget for NO_x is 27.73 tons per summer day. The results of the air quality analysis demonstrate that the VOC and NO_x emissions from all Action scenarios are less than the VOC and NO_x emissions budgets for the Western Massachusetts Nonattainment Area are shown in Tables 16-3 and 16-4.

Air Quality Conformity Analysis

The emissions from the following MPOs have been combined to show conformity with the SIP for the Western Massachusetts Nonattainment Area:

- Berkshire Region MPO
- Franklin Regional Council of Governments*
- Pioneer Valley MPO

Table 16-2: Future Regionally Significant Projects for the Western Massachusetts Ozone Non-Attainment Area

Analysis Year	Community	Project Description – Pioneer Valley Region
2016	Chicopee	Deady Bridge signal coordination: Broadway/Montgomery, Main, and Belcher Streets
2016	Hadley	Route 9 widening Home Depot to Lowes.
2016	Holyoke, W.Springfield	Route 5 signal coordination from Ashley Ave. to Main St.
2016	Springfield, Wilbraham	Boston Rd. signal coordination Pasco Rd. to Stony Hill Rd.
2016	Westfield	Route 10/202 Great River Bridge - two bridges acting as one-way pairs.
2016	West Springfield	Improve the Union Street Railroad Underpass. Construct a truck bypass road.
2016	Through Region	Additional “Vermont” passenger rail service
2020	Chicopee/ South Hadley	Route 33 signal coordination and upgrades from Abbey St. to Fuller Rd.
2020	Hadley	Route 9 widening Middle Street to Lowes.
2020	Ludlow	Route 21 Center Street reconstruction and widening with center turn lane
2020	Northampton	Damon Rd. widening, improvements from Rte 9 to King St.
2020	Through Region	New Commuter Rail Service: Hartford, CT to Greenfield, MA
2025	Agawam	Connector, Route 5 to Route 57, eliminate rotary.
2025	Holyoke	Linden St. signal coordination and improvements at 5 intersections.
2025	Longmeadow	Route 5 signal coordination, improvements Converse St to Springfield city line.
2025	Westfield	Route 10/202 Elm Street, North Elm Street signal coordination.
2035	Agawam, Longmeadow, Springfield	South End Bridge improvements, including related work on I-91 between Exits 1-3.
2035	Agawam, West Springfield	Improvement to Route 5 access ramps for truck routing, route into CSX railyard.
		Project Description – Berkshire Region
2016	Great Barrington	Main St. intersection improvements, signalization upgrades and add turning lanes
2020	Pittsfield	Intersection widening, turning lane improvements First/Tyler & Tyler/Stoddard Ave
2025	Great Barrington	Realign & widen State Rd., including new bridge to replace the current Brown Bridge
2025	Lanesboro/Cheshire	Construct passing lanes on Route 8 between Mall Road and truck weighing station
2025	Pittsfield	Safety and capacity improvements on East St. between Elm St. and Merrill Road
2035	Pittsfield	Construct connector street from W. Housatonic St. to West St. near CSX yard
		Project Description - Franklin Region
2016	Through Region	Additional “Vermont” passenger rail service
2020	Greenfield, Deerfield, Whately	New Commuter Rail Service: Hartford, CT to Greenfield, MA

Using the latest planning assumptions, the Massachusetts Department of Transportation, Office of Transportation Planning, estimated the emissions for VOC and NOx for all areas and all MPOs through a combination of the statewide and selected regional travel demand models (and with assistance from MPO staff). The VOC mobile source emission budget for 2009 for the Western Massachusetts Nonattainment Area has been set at 10.73 tons per summer day and the 2009 mobile source budget for NOx is 27.73 tons per summer day. The results of the air quality analysis demonstrate that the VOC and NOx emissions from all Action scenarios are less than the VOC and NOx emissions budgets for the Western Massachusetts Nonattainment Area are shown in Tables 16-3 and 16-4.

The Franklin County TPO has conducted an air quality analysis of the 2012 Franklin Regional Transportation Plan and its latest conformity determination. The purpose of the analysis is to evaluate the air quality impacts of the Plan on the SIP. The analysis evaluates the change in ozone precursor emissions (VOCs, and NOx) due to the implementation of the 2012 Franklin Regional Transportation Plan. The modeling procedures and assumptions used in this air quality analysis follow guidance from EPA and the Commonwealth and are consistent with all present and past procedures used by the Massachusetts DEP to develop and amend the SIP.

MassDOT has found the emission levels from all MPOs in Western Massachusetts – including from the 2012 Franklin Regional Transportation Plan – to be in conformance with the SIP according to conformity criteria. Specifically, the following conditions are met:

- The VOC emissions for the Action (build) scenarios are less than the 2009 VOC motor

Table 16-3: VOC Emissions Estimates for the Western Massachusetts Ozone Nonattainment Area (all emissions in tons per summer day)

Year	Franklin County Action Emissions	Western MA Action Emissions	Budget	Difference (Action – Budget)
2010	n/a	10.947	n/a	n/a
2016	1.0069	6.832	10.73	-3.898
2020	0.8876	5.979	10.73	-4.751
2025	0.8204	5.534	10.73	-5.196
2035	0.8606	5.602	10.73	-5.128

Table 16-4: NOx Emissions Estimates for the Western Massachusetts Ozone Nonattainment Area (all emissions in tons per summer day)

Year	Franklin County Action Emissions	Western MA Action Emissions	Budget	Difference (Action – Budget)
2010	n/a	27.736	n/a	n/a
2016	1.7615	11.751	27.73	-15.979
2020	1.1442	7.732	27.73	-19.998
2025	0.8521	5.774	27.73	-21.956
2035	0.8902	5.018	27.73	-22.712

vehicle emission budget for analysis years 2016 through 2035.

- The NOx emissions for the Action (build) scenario are less than the 2009 NOx motor vehicle emission budget for analysis years 2016 through 2035.

In accordance with Section 176(c)(4) of the Clean Air Act as amended in 1990, the TPO for the Franklin County Region has completed its review and hereby certifies that the 2012 Franklin Regional Transportation Plan and its latest conformity determination satisfies the conformity criteria where applicable, and therefore conditionally conforms with 40 CFR Parts 51 and 93, and 310 CMR 60.03, and is consistent with the air quality goals in the Massachusetts State Implementation Plan.

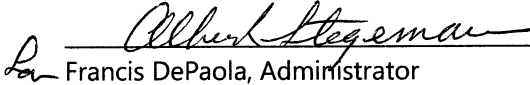
2012 FRANKLIN REGIONAL TRANSPORTATION PLAN

Certification that the 2012 Franklin Regional Transportation Plan is in conformance
with the State Implementation Plan



Richard A. Davey, Secretary and CEO of Transportation
MassDOT

14 Sept 11
Date



Francis DePaola, Administrator
MassDOT

09/14/11
Date



Bill Perlman, Regionally Elected Representative to the
FRCOG Executive Committee

9/14/11
Date



John Pacioek, Chair
FRCOG Executive Committee

9/14/11
Date

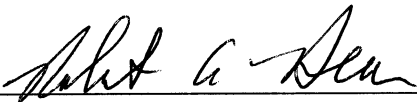


Rick Kwiatkowski, Chair
FRTA

9/14/11
Date

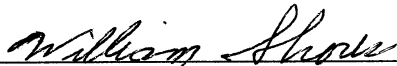
William Martin, Mayor
City of Greenfield

Date



Robert Dean, West County
Sub-regional Representative

9/14/11
Date



William Shores, Central County
Sub-regional Representative

9/14/11
Date

Vacant, East County
Agency

Date

17



Recommended Projects

17 Recommended Projects

As part of the development of the *Franklin Region Transportation Plan*, regional needs and priorities for a 25 year horizon (from 2012 through 2035) were identified. Recommended projects were developed based on these identified needs and priorities. This chapter contains a summary of the recommended projects. These recommendations were identified during an extensive public participation process that included outreach, informational meetings and input sessions throughout Franklin County. Additionally, collaborative meetings were held with transportation colleagues from Franklin County, the Massachusetts Department of Transportation (MassDOT), the Federal Highway Administration, and the Federal Transit Administration. In addition to the public input that was received, transportation staff conducted research and analyzed transportation-related regional data to identify transportation trends and needs. The findings and trends that shaped the recommended projects are summarized in the following paragraphs.

Overall, an interest in alternative transportation and more environmentally sensitive options was expressed strongly and frequently throughout the public participation process. The need for improved public transit in the region was the most frequently expressed comment during the public participation process. Many individuals expressed a desire to take public transit for economic (to save money) and/or environmental reasons (reduced emissions/better for the environment), but are unable to do so because of limited routes and/or schedules. The demand for additional forms of alternative transportation such as additional park and ride lots and passenger rail was also expressed. The continued support and enthusiasm for bicycling in Franklin County for both transportation and recreational purposes was confirmed during the public input sessions. An interest in increased

sustainability and the threat of climate change was also a frequent theme in the public's comments.

The safety of the roads in Franklin County was also a strong theme. The great strides that have been made to make the roads in Franklin County safer, particularly on Route 2 and Route 116, were acknowledged. However, the fact that there are additional improvements that could be evaluated and possibly implemented was recognized. Specific recommendations for additional safety evaluations are detailed in the plan and in this chapter.

The rural and scenic character of Franklin County remains an important consideration as road and bridge projects are planned and implemented. The scenic and natural resources of the area should be taken into consideration when improvements are designed so that they can be implemented in a context sensitive manner.

The many Scenic Byways that run through the area make Franklin County a special place and help bring tourism and economic development to the region. As a result, the needs of tourists and the unique requirements of a scenic byway should be taken into consideration during any transportation project planning.

Regional demographic figures show that Franklin County's population is aging. Future transportation planning should take this into consideration. The transportation needs of senior citizens should to be considered.

Additional high-speed broadband service that is currently being planned and implemented in the region to will also have an impact on the county's transportation needs in the future. Improved internet access will allow more people to have the option of working from home. In addition, the arrival of broadband may attract new business and residents to Franklin County, which could increase the number of vehicles on the roads as people may choose to live in more remote parts of the region.

Recommended Projects

20 Top Transportation Recommendations for Franklin County

The following is a listing of the twenty top transportation recommendations to be pursued through 2035. The recommended projects are not listed in a ranked, prioritized order, but instead represent the most important projects to the region. The projects are being listed to highlight their importance.

Safety Improvements

- Advance the planned Route 2 East Safety Improvements in Farley, Erving Center, and Gill/Greenfield.
- Construct improvements to better accommodate slow-moving vehicles (in many cases trucks) on Route 2 westbound up Greenfield Mountain.
- Rehabilitate the General Pierce Bridge in Greenfield.
- Implement safety and traffic flow improvements on Route 2 in Greenfield near the accesses to the commercial developments to the west of the rotary at Interstate-91/Route 2/Route 2A.
- Evaluate, design and construct Route 2 West Safety Improvements including protected turn lanes at Colrain-Shelburne Road and South Maple Street in Shelburne, and traffic calming in Charlemont Village Center.

Major Highway Projects

- Reconstruct Route 2 in Charlemont, including rehabilitating several culverts.
- Construct the Interstate-91 northbound Exit 24 ramp realignment project.
- Replace retaining walls on Route 116 along the South River.

Public Transit and Alternative Transportation

- Expand bus service throughout the county.
- Increase frequency and extend bus service hours during evenings and weekends to better serve the public.
- Create additional Park and Ride lots throughout the county.
- Construct a Park and Ride lot near the Interstate-91 Exit 24 in Whately.

- Advance and promote the establishment of passenger rail service from New Haven, Connecticut to St. Albans, Vermont with a stop in Greenfield.
- Plan for passenger rail service between Franklin County and Boston.
- Promote ridesharing in the region.

Pedestrian and Bicycling

- Construct a bikeway to connect the downtowns of Athol and Orange.
- Construct an Erving-Wendell Bike Path to connect Erving Center with Farley and Ervingside without having to travel on Route 2.
- Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street in Buckland.

Scenic Byways and Community Development

- Purchase conservation restrictions, agricultural preservation restrictions or land in fee from willing land owners to permanently protect important areas along the Scenic Byways.
- Create a parking garage near the Regional Transit Center to facilitate regional commuting and downtown revitalization efforts.

Complete List of Recommended Projects

The following is a table of projects categorized by the timeframe for implementation and the type of project (advocacy, planning/design, construction/implementation, monitoring or ongoing activities):

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Bernardston	Bridge Preservation: Route 10. (Projis Number 605070) (Bridge Number B-10-018)	C/I					Not known at this time.
Bernardston	Bridge Replacement: Brattleboro Road. (Projis Number 604189) (Bridge Number B-10-004)	P/D	C/I				\$1,747,200 (includes 4% inflation rate) (\$1,680,000 original estimate)
Buckland	Bridge Replacement: Route 112 (Ashfield Road). (Projis Number 606441) (Bridge Number B-28-002) Advertising Date: 5/19/2012	P/D	C/I				\$2,122,036 (includes 4% inflation rate) \$2,040,420 original estimate)
Buckland/ Shelburne	Bridge Preservation: Buckland/Shelburne Bridge on Route 2A (Bridge Street) over Deerfield River. (Projis Number 606441) (Bridge Numbers B-28-002 and S-11-001) Advertising Date: 10/25/2014	P/D and C/I					\$1,010,000
Charlemont	Bridge Replacement: Mountain Road over Hartwell Brook. (Projis Number 603704) (Bridge Number C-05-036) Advertising Date: 7/16/2011	P/D and C/I					\$1,266,894 (Accelerated Bridge Program)

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Charlemont	Culvert Replacement: Route 2 over Oxbow Brook and Wilder Brook. (Projis Number 605842) (Bridges Numbers C-05-016 and C-05-017) Advertising Date: 8/6/2011	C/I 2011					\$2,386,492
Charlemont	Culvert Replacements: Route 2 (6 culverts in Charlemont).	C/I	C/I				\$8,000,000 (2011-2015) \$12,480,000 (2016-2020 includes 4% inflation rate) (\$12,000,000 Original Estimate)
Charlemont	Bridge Replacement: Zoar Road over Pelham Brook (Projis No. 605286; Bridge No. C-05-002).	P/D	C/I				\$2,907,014 (includes 4% inflation rate) (\$2,795,206 Original Estimate)
Charlemont	Bridge Replacement: Route 2 over Trout Brook (Projis No. 606158) Bridge No. C-05-020). Advertising Date: 5/2/2015	P/D and C/I	C/I				\$1,213,680 (includes 4% inflation rate) (\$1,167,000 Original Estimate)
Colrain	Bridge Replacements: Two bridges on Heath Road over the North River. One of the bridges currently has a weight restriction. (Bridges Numbers C-18-013 and C-18-020).	P/D	C/I				\$624,000 (includes 4% inflation rate) (\$600,000 Original Estimate)

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Colrain:	Bridge Replacement: Bridge on Archambo Road near White Lane over the North River. Bridge currently has a weight restriction. (Bridge No. C-18-019).	P/D	C/I				\$312,000 (includes 4% inflation rate) (\$300,000 Original Estimate)
Colrain:	Bridge Replacement: Adamsville Road over the North River. Bridge currently has a weight restriction. (Projis Number 605080) (Bridge No. C-18-008).	P/D	C/I				\$312,000 (includes 4% inflation rate) (\$300,000 Original Estimate)
Colrain	Bridge Structural Maintenance: Route 112 (Jacksonville Road) over the North River. (Projis Number 605290) (Bridge Number C-18-028)		P/D and C/D				\$11,807,174 (includes 4% inflation rate) (\$11,353,052 Original Estimate)
Conway	Bridge Replacement: North Poland Road over Poland Brook. (Projis Number 604005) (Bridge Number C-20-003) Advertising Date: 7/30/11	C/I					\$1,663,250
Conway:	Bridge Replacement: North Poland Road over the South River. (Bridges Numbers C-20-004 and C-20-005)			P/D and C/I			\$4,049,021 (includes 4% inflation rate) (\$3,200,000 Original Estimate)

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Deerfield	Bridge Rehabilitations: North and south bound bridges on Interstate-91 over the Deerfield River, Lower Road and Stillwater Road. (Projis Number 603478) (Bridges Numbers D-06-044 and D-06-045) Advertise Date (7/9/11)	P/D and C/I	C/I				\$44,275,102 (AC 4 years) \$13 mil:2012, \$13 mil: 2013, and \$13 mil:2014 \$6.5 mil: 2016-20)
Deerfield	Bridge Reconstruction: Route 116 over the Mill River. (Projis Number 605732) (Bridge Number. D-06-030)	C/I					\$1,600,000
Deerfield	Bridge Preservation: McClelland Farm Road over railroad. (Projis Number 602320) (Bridge Number. D-06-023)	C/I					\$4,528,100
Erving	Bridge Replacement: Church Street bridge over Keyup Brook. (Projis Number 603604) (Bridge Number. E-10-011) (Estimated bid date 2015)	P/D and C/I					\$1,820,900
Erving	Bridge Reconstruction: Farley Road over the Millers River. (Projis Number 605295) (Bridge Number. E-10-006)	P/D and C/I					\$5,696,144
Greenfield	Bridge Reconstruction: Interstate-91 over 5/10 (Bernardston Road). (Projis Number 605300) (Bridge Number. G-12-042)	P/D And C/I 2015					Not sure of amount

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Greenfield	Bridge Rehabilitation: Eunice Williams Covered Bridge over the Green River. (Projis Number 601894) (Bridge Number G-12-10)	P/D and C/I					\$2,500,000
Greenfield and Gill	Bridge Rehabilitation: Route 2 at Factory Hollow bridge over Falls River. (NEW Projis No. 606442 and OLD Projis No. 603504) (Bridges Numbers G-04-003and G-12-004)	C/I					\$7,968,066
Greenfield and Montague	Bridge Rehabilitation: General Pierce Bridge on Montague Road over the Connecticut River. (Projis Number 601186) (Bridge Numbers G-12-020 and M-28-001).	P/D and C/I	C/I				\$19,937,400
Greenfield	Investigate options for improving narrow bridge underpass that impedes truck access at the Montague City Road and Cheapside Street intersection.	P/D					
Hawley	Bridge Replacement: Savoy Road over the Chickley River. (Projis Number 604830) (Bridge Number H-13-003)	P/D and C/I					\$4,083,744
Heath	Bridge Replacement: Dell Bridge over Route 8A. (Bridge Number H-14-001).	P/D	C/I				\$1,456,000 (includes 4% inflation rate) (\$1,400,000 Original Estimate)

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Heath	Bridge Replacement: Sadoga Road over Burrington Brook. (Bridge Number H-14-009).	P/D	C/I				\$700,897 (includes 4% inflation rate) (\$673,939 Original Estimate)
Montague and Gill	Bridge Rehabilitation: Gill-Montague Bridge over the Connecticut River. (Projis Number 601585) (Bridge Numbers G-04-010 and M-28-031)	P/D and C/I	C/I				\$40,726,536 (\$4 mil: 2011, \$8 mil: 2012, \$8 mil: 2013 and \$5 mil:2014) \$15 mil was programmed for the project in FY2008-10 Remaining funding needed estimated \$790,400 would be programmed in FY2016-20
Northfield	Bridge Replacement: Birnam Road over Mill Brook. (Projis Number 602319) (Bridge Number N-22-010)						\$600,000
Orange	Bridge Replacement: Logan Road. (Projis number 603727) (Bridge Number O-03-001)	C/I					\$1,300,000
Orange	Bridge Replacement: Brookside Road over Pan Am Railroad. (Projis number 604881) (Bridge Number O-03-015)	C/I					\$3,400,000

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Orange	Bridge Replacement: Route 2 over Route 202. (Projis number 606309) (Bridge Number O-03-021)	C/I					\$6,259,804
Bernardston	Road Resurfacing: I-91 south and northbound lanes. (Projis No. 606173)	C/I					\$9,103,500
Deerfield	Road Resurfacing: I-91 south and northbound lanes. (Projis No. 605595)	C/I					\$14,815,680
Ashfield	Retaining wall replacement: Route 116 along the South River at 2 locations. (Projis number 606411 Advertising Date: 10/3/2011)	C/I					\$2,943,900
Bernardston	Road Resurfacing and Related Work: Route 10. (Projis Number 60610)	C/I					\$2,018,578
Buckland and Charlemont	Road Resurfacing: Route 2. (Projis Number 602316)	C/I	C/I				\$20,000,000 (\$10 mil: 2011-2015 and \$10.4 mil: 2016-2020)
Charlemont	Road Reconstruction: South River Road. Project includes replacing retaining walls.	P/D and C/I					\$819,000
Buckland	Road Reconstruction and Minor Widening: Conway Street, South Street and Conway Road. (Projis Number 606463) Advertising Date: 10/18/2014	P/D and C/I					\$5,160,000

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Conway	Retaining Wall Replacement: Route 116 along the South River at 2 locations. (Projis number 80822) Advertising Date: 10/15/2014	C/I					\$3,300,000
Erving	Design and Construction of Safety Improvements: Route 2 in Erving Center. (Projis Number 604818)	P/D and C/I					\$4,000,000
Erving	Design and Construction of Safety Improvements: Route 2 in Erving in Farley Safety. (Projis No. 604959)	P/D and C/I					\$3,000,000
Erving and Northfield	Road Reconstruction: Route 63. (Projis Number 601657)	P/D and C/I					\$7,836,889
Deerfield and Whately	Road Resurfacing: Routes 5/10. (Projis Number 606011)	P/D and C/I					\$4,000,000
Greenfield	Construction of Roundabout: Intersection of Colrain Road, Colrain Street, and College Drive. (Projis Number 606048)	P/D and C/I					\$1,600,000
Greenfield	Road Resurfacing: Route 2. (Projis Number 606006)	P/D and C/I					\$2,600,000
Hawley	Road Reconstruction: Route 8A (West Hawley Road) from Sears Road south to Pudding Hollow Road. (Projis Number 122950) Advertising Date: 10/25/2014	P/D and C/I					\$2,000,000
New Salem and Shutesbury	Road Reconstruction: Route 202. (Projis Number 603820)	P/D and C/I					\$4,200,000

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Leverett	Investigate possible improvements (to road alignment and/or sign locations) to improve safety and traffic flow at the intersection of Cushman Road and Shutesbury Road in Leverett.	P/D	P/D				
Montague	Road Reconstruction: Greenfield Road. (Projis Number 601657)	P/D and C/I					\$7,836,889
Montague	Road Resurfacing: Greenfield Road. (Projis Number 601127)	P/D and C/I					\$1,750,000
Montague	Road Reconstruction: Montague City Road. (Projis No. 603876).	C/I					\$3,520,000
Northfield	Road Reconstruction: Route 63(Main Street). (Projis Number 604820)	P/D and C/I					\$1,300,000
Orange	Road Reconstruction: North Main Street. (Projis Number 603371)	P/D and C/I					\$2,922,556
Charlemont	Work with MassDOT to develop and implement traffic calming and pedestrian improvements on Route 2 West through the Charlemont Village Center.	P/D					
Deerfield, Whately, and Sunderland	Monitor congestion levels along the Route 5 and 10 and Route 116 corridors in Deerfield, Whately and Sunderland and the Route 2 and Route 2A corridors in Greenfield.	M	M	M	M	M	
Deerfield	Implement safety recommendations from the Road Safety Audits, including the realignment and potential signalization of Exit 24 off of northbound I-91 onto Route 5/10	P/D					
Greenfield	Improve safety at commercial driveways along Route 2 West in Greenfield.	P/D					

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Greenfield	Work with MassDOT to examine and implement, if feasible, the installation of a climbing lane up Greenfield Mountain on Route 2 west in Greenfield.	P/D and C/I					
Greenfield	Conduct follow-up to determine the effectiveness of improvements at the Greenfield Rotary.	M					
Montague	Examine this intersection of Turnpike Road and Turners Falls Road and consider options for improving movement for truck traffic.	P/D					
Region-wide	Work with Towns to implement requirements of the sign retroreflectivity program.	P/D					
Region-wide	Ensure that roundabouts are evaluated as options for all intersection improvements.	O	O	O	O	O	
Region-wide	Continue to monitor the transport of hazardous materials in the region	M	M	M	M	M	
Region-wide	Work with MassDOT, Towns, and Police Departments to identify corridors experiencing elevated numbers of "Lane Departure" crashes. Develop strategies to mitigate this type of crash.	O	O	O	O	O	
Region-wide	Continue to participate in incident management preparedness and evacuation planning in the region.	M	M	M	M	M	
Region-wide	Identify evacuation shelters for large-scale emergencies.	O	O	O	O	O	
Region-wide	Assist employers and critical facilities with planning for employee transportation in the event of an emergency or severe storm.	O	O	O	O	O	
Shelburne	Determine the need for and feasibility of adding a dedicated right turn lane on Route 2 at the intersection with Colrain-Shelburne Road.	P/D					

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Shelburne	Explore the option of adding a protected left turn lane when traveling west and entering Shelburne Falls at the intersection of Route 2 and South Maple Street.	P/D					
Sunderland	Monitor the effectiveness of the safety improvements implemented along Route 116 in Sunderland.	M	M	M	M	M	
Deerfield and Whately	Intersection and signal improvements: At the intersection of Routes 5/10/116 and at Exit 24 Northbound off of I-91. (Projis Number 606217)	P/D and C/I					\$486,507
Region-wide	Regional HSIP Improvements at various locations	P/D and C/I					\$1,269,875 Funding: HSIP target for 5 years
East County	Continue to staff the Route 2 Task Force and advocate for advancement of additional safety improvements.	A	A	A	A	A	
Region-wide	Actively participate in the Strategic Highway Safety Plan process.	A, P/D and C/I					
Region-wide	Update the Most Hazardous Intersections report using the next set of available data.	A, P/D and M					
Region-wide	Continue conducting Road Safety Audits to address safety issues in the region.	P/D and M					
Region-wide	Identify corridors experiencing elevated numbers of “Lane Departure” crashes. Develop strategies to mitigate this type of crash.	A, P/D and C/I					

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Orange Municipal Airport	Complete short-term projects at the Orange Municipal Airport identified in the airport's Capital Improvement Plan to rehabilitate the terminal apron, build new hangars, and construct new taxiway.	C/I					\$4,606,000
Orange Municipal Airport	Construct a new snow removal equipment building and rehabilitate Runway 14-32.		C/I				\$1,248,000 (includes 4% inflation rate) (\$1,200,000 Original Estimate)
Orange Municipal Airport	Pursue funding for the implementation of future projects including the establishment of a large corporate aircraft hangar, a small aircraft T-hangar, and a new terminal building	O	O	O	O	O	
Orange Municipal Airport	Construct new infrastructure, including new sewer lines, needed for industrial uses.		C/I				
Turners Falls Municipal Airport	Reconstruct and extend the current runway (runway 16-34)	C/I					\$7,000,000
Turners Falls Municipal Airport	Reconstruct parallel taxiway; extend the apron, remove on-airport tree obstructions; install an obstruction light on Country Hill, and acquire land for airport expansion.	P/D and C/I					\$2,500,000
Turners Falls Municipal Airport	Implement mid-term projects identified in the Turner's Falls Municipal Airport's CIP to purchase new ground equipment, install an automated weather observing system, and replace and relocate the airport's locating beacon.		P/D and C/I				\$1,560,000 (includes 4% inflation rate) (\$1,500,000 Original Estimate)

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Turners Falls Municipal Airport	Continue pursuing long-term improvement projects at the Turners Falls Municipal Airport including the construction of up to 26 new airport hangars.		P/D and C/I				\$1,560,000 (includes 4% inflation rate) (\$1,500,000 Original Estimate)
Orange Municipal Airport and Turners Falls Municipal Airports	Support the expansion of activities and facilities at the Turners Falls Municipal Airport and Orange Municipal Airport, as defined in the airports' Capital Improvement Plans, to promote the financial self sufficiency of the airports, serve the regional business interests, and support economic development in Franklin County.	A and P/D	A and P/D	A and P/D	A and P/D	A and P/D	
Orange Municipal Airport and Turners Falls Municipal Airports	Continue to monitor and update security systems at the Orange Municipal Airport and the Turners Falls Municipal Airport as necessary.	M	M	M	M	M	
Greenfield	Develop the Franklin Regional Transit Center in Greenfield as a hub for bus and potential passenger rail service.	C/I					\$9,000,000
Whately	Park and Ride Lot at the intersection of Route 116, 5 and 10. (Projis Number 604222)	P/D and C/I					\$1,324,885
Region-wide	Work with the FRTA, PVTA, and the MART to advocate for the continued operation of and permanent funding for Route 32 (formerly the G-Link) and Route 31 (formerly the Valley Route) and address additional needs for expanding these routes to include additional evening and weekend service.	A	A	A	A	A	

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Region-wide	Pursue funding to expand FRTA routes to include additional daily runs and weekend hours.	O	O	O	O	O	
Greenfield, Deerfield, Sunderland	Provide better and more frequent service between GCC and UMASS-Amherst.	A and P/D	A and P/D	A and P/D	A and P/D	A and P/D	
Sunderland and Deerfield	Work with the FRTA and the PVRTA to provide Sunderland and Leverett seniors and residents with disabilities with transit/paratransit access to the Frontier Senior Center in South Deerfield, and the other Franklin County towns, including Greenfield and Montague.	A	A	A	A	A	
Shelburne Falls and West County	Determine potential locations for additional bus stops in Shelburne Falls and along Route 2 in west county.	P/D					
Whately	Coordinate with the FRTA and the PVRTA to provide the proposed Whately Park and Ride with regularly scheduled transit services.	P/D					
West County	Evaluate the feasibility of increasing van services for seniors and residents with disabilities to the West County area, particularly areas that have less than weekly van service and access.	P/D	P/D				
Region-wide	Review possible extensions of the West County Transit Routes to better link to South Deerfield and beyond.	P/D	P/D				
Region-wide	Coordinate with the Franklin Regional Transit Authority on the site design and development of the rail platform at the Franklin Regional Transit Center in Greenfield.	P/D and C/I					

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Franklin County Towns along the I-91 Corridor	Continue to participate and plan for rail service on the Connecticut Valley Line. Participate in the work to plan rail service along the Hartford-Springfield-Greenfield- Vermont route.	P/D and C/I	C/I	A	A	A	
Region-wide	Continue to monitor the implementation of the recommendations of the Fitchburg Commuter Rail Service Expansion Study, particularly the recommendations that could most affect Franklin County commuters, including: the creation of a park and ride facility in Gardner and the extension of commuter rail service west of Fitchburg.	M	M	M	M	M	
Greater Greenfield and the Northern Tier Area of Franklin County	Promote the extension of east-west passenger rail service from Fitchburg to Greenfield.	A	A	A	A	A	
Erving and Wendell	Pursue funding to complete the design work for the Erving-Wendell Bike Path.	P/D	C/I				
Montague	Construct a bicycle and pedestrian bridge over the Boston and Maine Railroad tracks on Greenfield Road in Montague. (Projis Number project 604696)	P/D and C/I					\$2,000,000
Orange	Support the completion of the design of the Millers River Greenway to connect the Riverfront Park in Orange with the Alan Rich Environmental Park in Athol.	O	O	O	O	O	
Region-wide	Install additional Franklin County Bikeway Logo signs, on the newly identified segments of the Franklin County Bikeway network as outlined in the <i>Franklin County Bikeway Plan Update (2009)</i> .	C/I	O	O	O	O	\$200,000

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Region-wide	Update and reprint the maps of the Franklin County Bikeway.	O	O	O	O	O	\$32,489
Region-wide	Work with partner regional planning agencies to create a bicycle map for the tri-state (Massachusetts, New Hampshire, and Vermont) area of the Connecticut River Scenic Farm Byway.	P/D and C/I					
Buckland	Construct a sidewalk to Mohawk Trail Regional High School and Middle School along Route 112 and North Street.	P/D and C/I					
Region-wide	Include pedestrian infrastructure improvements when appropriate into the scope of road construction projects.	O	O	O	O	O	
Region-wide	Advocate for needed pedestrian facilities improvements and funding opportunities.	A	A	A	A	A	
Region-wide	Advance participation of Franklin County schools in the Massachusetts Safe Routes to School Program with the goal of improving pedestrian connectivity to schools and within communities.	A and P/D	A	A	O	O	
Region-wide	Prioritize needed improvement to meet compliance with the Americans with Disabilities Act (ADA) regarding pedestrian facilities and work to correct deficiencies.	O	O	O	O	O	
Region-wide	Develop best practices for maintenance and/or installation of sidewalks, crosswalks, and pedestrian-related signs.	A	A	A	A	A	
Region-wide	Explore opportunities to implement traffic calming measures at appropriate locations in order to reduce vehicle speeds in areas of pedestrian activity.	P/D	P/D	P/D	P/D	P/D	
Region-wide	Encourage towns to consider the adoption on Complete Streets policies where appropriate.	A	A	A	A	A	

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Region-wide	Research the issue of the insignificant (\$1) fine imposed for jaywalking on the state highway and the possibility of updating the fee structure to allow towns to punish for poor pedestrian practices.	A					
Region-wide	Develop and implement a campaign to educate the public about safe pedestrian practices.	A	A				
Region-wide	Encourage employers and businesses to institute programs and promotional campaigns to encourage walking by their employees and patrons instead of driving.	O	O	O	O	O	
Region-wide	Work with local municipalities to provide technical assistance to improve bicycle and pedestrian access and safety in their towns.	O	O	O	O		
All Byways in Franklin County	Implement the western Massachusetts Scenic Byways Promotional campaign.	P/D and C/I					\$1,096,630
Northfield, Montague, Erving, Sunderland	Update Connecticut River Byway Corridor Management Plan.	P/D					\$85,000
Greater Connecticut River Scenic Byway Area	Develop a tri-state bicycle route map for the Connecticut River Scenic Farm Byway working with the other planning regions and state planning offices in New Hampshire and Vermont.	P/D and C/I					\$50,000
Region-wide	Encourage the Visitors Centers, Chambers of Commerce, and the Massachusetts Office of Travel and Tourism (MOTT) organizations to include information on bicycling in Franklin County in their tourism materials.	A	A	A	A	A	
Region-wide	Create advertisements to be used in bicycling magazines and websites promoting bicycling in Franklin County.	A	A				\$40,800

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Mohawk Trail Scenic Byway	Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions, agricultural preservation restrictions, and/or fee interest from willing landowners.	O	O	O	O	O	\$2,693,000
Connecticut River Byway	Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions, agricultural preservation restrictions, and/or fee interest from willing landowners.	C/I	C/I	C/I	C/I	C/I	\$1,393,000
Route 112 Scenic Byway	Continue work to permanently protect scenic and agricultural lands along the scenic byways by purchasing conservation restrictions, agricultural preservation restrictions, and/or fee interest from willing landowners.	C/I	C/I	C/I	C/I	C/I	\$1,600,000 \$288,500 (already funded)
Connecticut River Scenic Farm Byway Area in Erving	Design and construct streetscape improvements on Route 63 in Erving.	P/D and C/I					\$450,000 Funded through FY2004 Section 115 Appropriation
Mohawk Trail Scenic Byway in Greenfield	Design improvements at the Upper Pioneer Valley Visitors Center in Greenfield.	P/D and C/I					\$500,000 Funded through FY2004 Section 115 Appropriation
Route 116 Scenic Byway in Conway, Deerfield and Ashfield.	Prepare a Route 116 Corridor Management Plan working with BRPC and PVPC. (Projis Number 605931)	P/D					\$128,106 (funded through FY09 Scenic Byway discretionary funds)
Region-wide	Ensure that all new ITS applications and deployments are consistent with the Western Massachusetts Regional ITS Architecture.	O	O	O	O	O	

RECOMMENDATIONS							
The abbreviations used in the table describe the action(s) to be taken during the specified timeframe: A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities							
Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Region-wide	Work with the Regional Traveler Information Center (RTIC) to identify locations for additional traffic cameras, weather sensors, and other technology infrastructure to expand travel information available to the public.	O	O	O	O	O	
Region-wide	Support the swift deployment of the MassBroadband 123 fiber optic network and related broadband technologies in the region working with WesternMA Connect, Inc. and the Massachusetts Broadband Institute.	C/I	O	O	O	O	
Region-wide	Implement strategies to increase public participation in the transportation planning process by using new technologies that improve access to information such as the Internet and social networking.	O	O	O	O	O	
Region-wide	Explore bringing a Zipcar program or other shared vehicle service to Greenfield and Franklin County.	A	A	A	A	A	
Region-wide	Develop local and regional emergency action plans for events related to climate change.	P/D	P/D	P/D	P/D	P/D	
Region-wide	Continue developing a Pavement Management System.	P/D	O	O	O	O	
Region-wide	Work with GreenDOT to promote more energy efficient and cleaner forms of transportation.	A	A	A		A	
Region-wide	Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to expand the region's preparedness to manage emergency incidents, including those which impact the regional transportation network.	O	O	O	O	O	

RECOMMENDATIONS

The abbreviations used in the table describe the action(s) to be taken during the specified timeframe:

A – Advocacy, P/D – Planning/Design, C/I – Construction/Implementation, M – Monitoring, O – Ongoing activities

Project Location	Project Description	Timeframe for Implementation					Estimated Total Cost
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	
Region-wide	Encourage the establishment of mutual aid agreements between towns and memorandums of understanding with businesses to facilitate access to those transportation resources when needed.	O	O	O	O	O	
Region-wide	Coordinate regional intelligent transportation systems (ITS) and emergency management.	O	O	O	O	O	
Region-wide	Coordinate the radio communication capabilities between emergency management personnel and the Franklin Regional Transit Authority.	O	O	O	O	O	
Region-wide	Develop evacuation plans for schools and other critical facilities located in potential inundation areas from a failure of the Harriman Dam.	P/D	P/D	O	O	O	

18



Financial Constraints

18 Financial Constraints

It is important to provide a financial context to transportation planning so that projects can be prioritized based on the projected availability of future funding. This plan is financially constrained based on financial information provided by MassDOT for 2012 to 2035.

Funding Available

Funding Available for Highway and Bridge Projects

The Federal Highway Administration funds and State Highway and Bridge funds were projected statewide for five year timeframes for the following funding categories:

- Major Infrastructure Projects;
- Federal Aid Bridge Projects;
- National Highway System/Interstate Maintenance (NHS/IM);
- Statewide Maintenance and
- Regional Discretionary Funding.

Local aid funding sources such as Chapter 90 and the MassWorks Programs are not included in the MassDOT funding projections. The MassDOT projections were based on the assumption that funding levels would increase by a 4 percent annual inflation rate after the year 2016.

Based on these funding projects, a total of \$792,559,000 is anticipated to be available to Franklin County for highway-related transportation improvements between 2012 and 2035. The forecasted funding levels for the Franklin Region were based on the projected amount available to Metropolitan Planning Organizations statewide, and the following factors:

- **Funds for Major Infrastructure and for Regional Discretionary:** Projected regional funding in for Major Infrastructure and Regional Discretionary projects are based on the regional share formula for the

Statewide Highway Funds developed by the Massachusetts Association of Regional Planning Agencies (MARPA). Under the MARPA formula, the Franklin Region is allotted 2.54% of the statewide funds distributed to the regions.

- **Funds for Bridges:** Projected regional funding for bridge improvements and repairs is based on each region's percentage of federal-aid eligible bridges. The Franklin Region's percentage is 6.45%.
- **Funds for Interstate Maintenance:** Projected regional funding for interstate maintenance projects is based on the regional share of Interstate lane mileage, excluding the Massachusetts Turnpike. The Franklin Region's percentage is 3.78%.

Funding Available for Transit Projects

As with highway and bridge funding, the estimated costs of transit recommendations and projected revenue also needs to be reviewed to ensure financial constraint. Estimates of available transit funding were provided by the MassDOT Rail and Transit Division. Federal funds must be used for capital projects. Capital funds may only be spent on tangible items such as equipment, preventative maintenance of vehicles, facilities and equipment, ADA services, facility improvements and the purchase of vehicles. Operating expenses must come from grants, state and local funding and farebox revenue. Operating expenses covers salaries, benefits, advertising and marketing expenses and other cash needs. A summary of the projected transit funding for the Franklin Regional Transit Authority from 2012 to 2035 is in Table 18-4 at the end of this chapter.

The projected transit funding does not include JARC or New Freedom funds because, while Franklin County is eligible for these funds, they are competitive grants and therefore cannot be expected.

The transit funds were projected on a statewide basis by MassDOT Rail and Transit Division, and are broken down in this Plan by the same five time periods as the highway and bridge funds, into the following categories:

- Paratransit/Van Service Projects (5310 Program)
- State Capital Investment
- State Assistance for Operations
- Non-Urbanized Area Formula Funding (5311 Program)
- Access to Jobs (5316 Program), and
- New Freedom Projects (5317 Program).

The forecasted funding levels for State Capital Assistance for Operations assume a 2.5% annual inflationary increase beyond the year 2009. The other transit funding projections assume a 3% inflation increase beyond the year 2010.

For funding under the 5310 Program, regional funding estimates were based on the past distribution of Mobility Assistance Program (MAP). Using this approach, the Franklin Region receives 5.73% of the statewide 5310 Program funds. This approach was agreed to by MassDOT Rail and Transit Division and the Massachusetts Association of Regional Transit Agencies (MARTA), and varied from a previous approach which based each region's funding on its percentage of the statewide elderly and disabled population. The projected State Capital Investment and State Assistance for Operations funds for each region were estimated based on current funding levels for these programs.

Funding for Other Transportation: Airports and Rail Projects

Finally, other transportation funding sources are included where available, for airport improvements and rail projects. Airport projects are generally funded 95.0% with Federal funds from the Federal Aviation Administration, 2.5% with State funds from the Massachusetts Aeronautics Commission, and 2.5% with local funds.

Project Cost Estimates

Cost estimates are included for construction/implementation related projects. Cost estimates were gathered from a variety of sources including the Franklin Regional Transit Authority, FRCOG, towns' Departments of Public Works, MassDOT, the Turners Falls Municipal Airport, and the Orange Municipal Airport. Costs for projects that are expected to extend beyond 2015 include an inflation factor of 4% per year.

Financially Constrained Plan

The 2012 Franklin Region Transportation Plan is financially constrained. The projected funding levels over the life of the Regional Transportation Plan are sufficient to fund the projects recommended in the Plan. The estimated total costs of the recommended projects (contained in the Recommended Projects Chapter) are \$340,000,000. These costs are estimated based on the best available information.

The financial constraint of the Plan was also reviewed within individual funding categories including Major Infrastructure Projects, Federal Aid Bridge Projects, National Highway System/Interstate Maintenance Projects, Statewide Maintenance and Regional Discretionary Program.

There are no projects included in the Plan that are funded with the **Major Infrastructure Projects** funding category.

Over the life of the Plan, a total of \$294,857,000 is available for **Federal Aid Bridge Projects**. The recommended projects section of the Plan includes an extensive listing of Federal Aid Bridge Projects that are expected to be undertaken in the region. These projects will be carried out as funding is available as determined through MassDOT and the MPO process. The regional bridge projects that will be completed within the financial constraints of Plan include: the reconstruction of the bridges (northbound and southbound) on Interstate-91; the reconstruction of the Gill-Montague Bridge; the reconstruction of the General Pierce Bridge in Greenfield and Montague; and the completion of structural maintenance on the bridge on Route 112 over the North River in Colrain. This Regional

Transportation Plan sets aside \$74,000,000 for these projects over the life of the Plan.

A total of \$87,769,000 is available to the Franklin County region over the life of the Plan for **National Highway System/Interstate Maintenance Projects**.

The Regional Transportation Plan includes approximately \$54,000,000 in National Highway System/Interstate Maintenance Projects. The projects include: the resurfacing of Interstate-91 in Deerfield; the resurfacing of Route 2 in Buckland and Charlemont; and the resurfacing of Interstate-91 in Bernardston. This Regional Transportation Plan sets aside \$34,000,000 for these projects over the life of the Plan.

A total of \$175,871,000 is available for **Statewide Maintenance Projects**. The Plan includes approximately \$13,000,000 in Statewide Maintenance Projects. There are no projects within this funding category that exceed \$10,000,000. The resurfacing of Routes 5/10 in Deerfield and Whately; the resurfacing of Route 202 in New Salem and Shutesbury; the reconstruction of Main Street (Route 63) in Northfield are among the project being funded through the Statewide Maintenance funding category. The Regional Transportation Plan sets aside \$9,500,000 for these projects.

A total of \$193,839,000 is available for **Regional Discretionary Projects**. The Plan includes approximately \$60,000,000 in Regional Discretionary Projects including: the repair of six culverts on Route 2 in Charlemont; the reconstruction of Route 63 in Erving and Northfield; the design and construction of safety improvements on the Farley section of Route 2 in Erving; and the design and construction of a

bikeway connection in Erving-Wendell. The Plan sets aside approximately \$34,000,000 for these projects.

The Franklin County Transportation Planning Organization is working to reactivate a **Pavement Management System** for the region. An initial pavement condition estimate was generated during 2010 using available data from MassDOT. Based on this preliminary assessment, it was determined that the cost to bring all county roads to “excellent” condition is not realistic due to financial and physical limitations. Consequently, a more realistic strategy is recommended at this time, which proposes: maintaining roadways that are currently in excellent and good condition, and preventing further deterioration of roadways in fair condition while bringing those roads up to excellent condition as soon as possible. The cost of this maintenance strategy is \$53,372,880 for a ten year timeframe. The pavement management strategy for the region will be developed in a financially constrained way that takes into account the projected revenues that will be available to the region. This funding is reflected in the statewide maintenance and regional discretionary funding categories in Table 18-1.

During the past three years, Franklin County has received an average of \$17,361,012 in Federal Aid and \$8,178,758 in Non-federal Aid funding for **Operations and Maintenance** of the road and bridge network. Using this as a guide to future funding levels, it is anticipated that \$15,000,000 per year will be allocated annually to operations and maintenance projects. This funding level is reflected in the statewide maintenance and regional discretionary funding categories in Table 18-1.

Table 18-1
Estimated Regional Transportation Plan Highway Funding for 2012-2035

Timeframe	2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	Total
Total Funding Available for Programming in the Franklin Region RTP	\$97,130,000	\$113,648,000	\$160,129,000	\$195,275,000	\$226,377,000	\$792,559,000
Major Infrastructure Projects	\$4,133,000	\$5,555,000	\$8,393,000	\$10,255,000	\$11,888,000	\$40,224,000
Federal Aid Bridge Projects	\$36,435,000	\$40,143,000	\$60,066,000	\$73,272,000	\$84,942,000	\$294,857,000
NHS/IM Projects	\$11,083,000	\$11,877,000	\$17,827,000	\$21,758,000	\$25,224,000	\$87,769,000
Statewide Maintenance*	\$27,411,000	\$27,962,000	\$34,028,000	\$40,046,000	\$46,424,000	\$175,871,000
Regional Discretionary Funding*	\$18,068,000	\$28,112,000	\$39,816,000	\$49,943,000	\$57,898,000	\$193,838,000

*As outlined previously in this chapter, operation and maintenance and pavement management work are included in these budget items.

Table 18-2
Major Infrastructure Projects

Project Name	Location	Amount of Funding per Timeframe				
		2012-2015	2016-2020	2021-2025	2026-2030	2031-2035
Route 112 (Jacksonville Road)	Colrain		\$11,807,174			
I-91 Bridges	Deerfield	\$44,000,000 AC for 2012, 2013 and 2014				
General Pierce Bridge	Greenfield and Montague		\$18,000,000			
Gill-Montague Bridge	Gill and Montague	\$10,000,000 AC for 2012 and 2013				

Table 18-3
Bridges

Costs	Timeframe					
	2012-2015 (Based on TIP)	Expected Costs 2016-2020	Expected Costs 2021- 2025	Expected Costs 2026- 2030	Expected Costs 2031-2035	Total for Life of RTP
Current Estimate	\$11,306,820	\$30,482,000	\$60,066,000	\$73,272,000	\$84,942,000	\$260,002,820
Funds Available	\$36,435,000	\$40,143,000	\$60,066,000	\$73,272,000	\$84,942,000	\$294,857,000
Reserve	\$25,128,180	\$9,661,000	\$0	\$0	\$0	\$34,789,180

The Franklin Regional Transit Authority (FRTA) develops its **transit operations** based on the revenues available through federal, state and local funding sources. During the development of this plan, the FRTA provided figures for the fiscal years 2012-2015 timeframe by transit funding category. These figures have been reviewed, and are financially constrained based on the projected funding available by transit category contained in Table 18-4: Massachusetts Transit Program Funding Forecasts (see following page).

Conclusion

The *Franklin Region Transportation Plan* demonstrates financial constraint in that the estimated costs of the recommended projects for the five-year timeframes and for the 2012 - 2035 period overall, do not exceed the projected funding levels.

Table 18-4
Massachusetts Transit Program Funding Forecasts
2012-2035

Federal Program			Note	2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	Total
	§ 5307	Urbanized Area Formula		\$0	\$0	\$0	\$0	\$0	\$0
	§ 5309	Capital Fixed Guideway Program	A	\$0	\$0	\$0	\$0	\$0	\$0
	§ 5310	Elderly and Disabled	B	\$95,564	\$100,000	\$100,000	\$100,000	\$100,000	\$495,564
	§ 5311	Non-Urbanized Area Formula		\$4,710,186	\$5,450,000	\$6,300,000	\$7,291,000	\$8,442,000	\$32,193,186
	§ 5316	JARC	C	\$305,872	\$311,989	\$318,229	\$324,594	\$ 331,085	\$ 1,591,769
	§ 5317	New Freedom	C	\$268,425	\$273,794	\$279,269	\$284,855	\$290,552	\$ 1,396,894
Commonwealth Programs			Note	2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	Total
	SCA	State Contract Assistance		\$3,915,341	\$4,529,000	\$5,235,000	\$6,060,000	\$7,013,000	\$26,752,341
	RTACAP	RTA Capital Assistance Program		\$4,800,799	\$6,252,925	\$6,878,217	\$7,566,039	\$8,322,643	\$33,820,624
	ITCCAP	RTA Intermodal Assistance Program	D	\$246,000	\$0	\$0	\$0	\$0	\$246,000
	MAP	Mobility Assistance Program		\$888,542	\$1,023,000	\$1,173,000	\$1,348,000	\$1,551,000	\$5,983,542
Statewide Programs			Note	2012-2015	2016-2020	2021-2025	2026-2030	2031-2035	Total
	§ 5311(f)	Intercity bus		\$2,783,522	\$3,218,000	\$3,718,000	\$4,297,000	\$4,969,000	\$18,985,522
	RTAP	Rural Transportation Assistance		\$542,519	\$620,000	\$701,000	\$800,000	\$915,000	\$3,578,519
	PNP	Private non-profits	B	\$4,802,297	\$5,560,000	\$6,435,000	\$7,445,000	\$8,617,000	\$32,859,297
	COA	Councils On Aging	B	\$1,600,766	\$1,848,000	\$2,131,000	\$2,457,000	\$2,838,000	\$10,874,766
	MassDOT	MassDOT Admin		\$5,558,272	\$6,417,000	\$7,389,000	\$8,512,000	\$9,821,000	\$37,697,272

A Earmark funds are not forecasted; only current actual shown.

B Competitive program with funding allocated based on actual application and award.

C Competitive program with funding allocated based on actual application and award. Amount displayed reflects upper annual potential award.

D ITCCAP program sunsets by 2014 and merges into RTACAP program

Regional Transportation Plan Appendices

Appendix A: Public Outreach Efforts and Comments

Appendix B: Surveys

Appendix C: Demographic Trends and Projections

Appendix D: Glossary of Transportation Acronyms

Appendix A Public Outreach Efforts

The following is a list of stakeholders that were contacted as part of the public outreach effort in the development of this Regional Transportation Plan.

- All twenty-six Franklin County town administrators
- All twenty-six Franklin County town highway departments
- Town of Greenfield Planning Director
- Town of Sunderland Energy Committee
- FRCOG Planning Board
- Walk Franklin County committee members
- Franklin County Bikeway Committee members
- MassDOT Districts 1 and 2
- MassDOT Office of Transportation Planning
- Transportation Planning Organization members
- Franklin Land Trust
- Mt. Grace Land Conservation Trust
- Franklin County Community Development Corporation
- Franklin Regional Housing and Redevelopment Authority
- Franklin Regional Transit Authority
- Greater Franklin County Comprehensive Economic Development Strategy Committee
- Franklin County Chamber of Commerce
- Franklin County Selectmen's Association
- Community Transit Services
- Stavros
- Councils on Aging
- About Town Taxi
- ACE Cab
- F.M. Kuzmeskus
- Connecticut River Watershed Council
- Indus-Rail Company
- YMCA
- Greenfield Community College
- Baystate Franklin Medical Center
- Congressman John Olver
- State Senator Stanley Rosenberg
- State Representative Stephen Kulik
- Massachusetts Department of Conservation and Recreation
- Massachusetts Rehabilitation Commission
- Massachusetts Historic Commission
- Massachusetts Department of Housing and Community Development
- Massachusetts Executive Office of Energy and Environmental Affairs
- Massachusetts Department of Environmental Protection
- Federal Highway Administration
- Federal Transit Administration
- Federal Railroad Administration
- Federal Aviation Administration

Appendix A Public Comments

Once the FRCOG staff had completed a draft of the 2012 Regional Transportation Plan, public input was sought from a variety of stakeholders, as well as those required by SAFETEA-LU, during a 30-day public review and comment period between August 8 and September 9, 2011. A public meeting was held on September 7, 2011 in the centralized location of Greenfield to directly obtain public input regarding the draft RTP.

As part of this outreach, the FRCOG received few substantial comments on the draft RTP. Those comments that were received were reviewed and incorporated, as appropriate, into the RTP during its preparation. The following is a list of comments received during the public meeting. Attached are the comments received from MassDOT and FHWA.

Comments Received during the Public Meeting

- There should be provisions made for biking and walking along Route 78 in Orange.
- There should be a passenger rail train that runs east to Boston for commuting.
- What are the passenger rail policies for bike accommodation on-board rail cars? FRCOG should advocate for bike accommodation.
- The recommended sidewalk along Route 112 to Mohawk Regional High School should also include a bike lane.
- The RTP should ensure that an effort is made within the county to prepare for the coming fuel shortage and effects from climate change.
 - The region should be more aggressive in promoting bicycling in Franklin County.
 - Need more mass transit.
- Bicycling on the Cheapside Bridge on Route 5/10 towards Deerfield is very dangerous. The road speeds should be lowered at this location.
- Vehicle speeds along Route 5/10 in Deerfield should be reevaluated for bike safety.
- There should be a bike lane on the length of Federal Street in Greenfield. This will make bicycling in the area easier, will help with economic development, and will help with traffic calming.
- Can FRCOG work to put in a bike lane in a town as a pilot study for other towns to see if it is feasible and the issues involved with it?
- Can FRTA keep track of how many bicycles are being placed on the bus bike racks? How are the racks being used?
- There should be more dedicated turn lanes in the county for two reasons. The first reason is driver safety. The other reason is environmental. Less fuel is used when accelerating and de-accelerating is minimized. Turning lanes would help keep through traffic from having to slow for turning vehicles.
- South River Road in Charlemont is in very bad condition. There is little pavement left and the retaining walls are in poor shape. This road is an alternate to Route 2 for emergencies and the town of Charlemont can afford to repair it.
- The reconstruction of the General Pierce Bridge should be redesigned to accommodate truck traffic. Specifically, it should be designed to have an increased weight limit of 49 tons.



Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO

massDOT
Massachusetts Department of Transportation

September 9, 2011

Ms. Linda Dunlavy, Executive Director
Franklin Regional Council of Governments
425 Main Street
Greenfield, MA 01301-3313

The Office of Transportation Planning has reviewed the draft 2012 Regional Transportation Plan released by the Franklin TPO on July 28, 2011. Please find our comments below:

- Title Page 3 – Franklin County Transportation Planning Organization and Endorsement Page
 - Please replace Secretary Jeffrey Mullan's name with Richard A. Davey.
 - Please change the title of Francis DePaola of the Highway Division to Administrator. He has been permanently appointed to the position as of August 11, 2011.
- Chapter 3 – Page 6: Coordination with State and Federal Agencies
 - Please replace Massachusetts "Historic" Commission with "Historical".
- Chapter 10 – Page 14: Safe Routes to School Program
 - Replace "MassRides" with "MassRIDES."
- Chapter 12 – Page 2: GreenDOT
 - Please include the text provided by the Office of Transportation Planning for documenting green house gas emissions reduction for GreenDOT implementation.
- Chapter 13 – Pages 4-5: Top Fifty Most Hazardous Intersections in Franklin County, 2004 – 2006 Table 13-2
 - The right side of the table on both pages appears to be cut off. Please correct the formatting.
- Chapter 14 – Page 6: Challenges for Large Scale Evacuations
 - The evacuation route map that is noted as being included at the end of the chapter is not attached. Please either include the map or remove reference to it.
- Chapter 15 – Scenic Byways and Tourism
 - Page 1: The Scenic Byways map that is noted as being included at the end of the chapter is not attached. Please either include the map or remove reference to it.
 - Pages 4-7: Future Scenic Byways projects. Several of these projects did not receive Scenic Byways funding in FY 2010. Please remove them from the document.
- Chapter 18 – Page 6: Estimated Project Costs Table 17-3
 - The first timeframe starts in 2011 and the last timeframe ends in 2036. Please correct the first timeframe to start on 2012 and end the last timeframe on 2035.
 - Bridge projects do not need to be itemized in the RTP.
 - Non-major infrastructure projects do not need to be itemized in the RTP.
 - Year of Expenditure inflation estimates need to be applied to all projects listed in the RTP.

Ten Park Plaza, Suite 3170, Boston, MA 02116
Tel: 617-973-7000, TDD: 617-973-7306
www.mass.gov/massdot

If you have any questions or concerns, please contact me at (617) 973-7844 or William Palmer at (617) 973-8070.

Sincerely,



David Mohler
Executive Director
Office of Transportation Planning

CC: Peter Niles, MassDOT, DHD, D1
Albert Stegeman, MassDOT, DHD, D2
Tina Cote, FRTA
Paul Maloney, FHWA
Bill Gordon, FTA

FHWA Comments on the Franklin Region TPO's Draft 2012-2035 RTP

9-6-2011

General Comments

- This draft document does not appear to have included a signatory page for the MPO voting members to sign, signifying that they endorse the RTP. Please include this page in the final document.

Chapter 5 – Roadway and Bridge Infrastructure

- This chapter provides the reader with a good understanding of what the existing pavement conditions are and what the estimated cost would be to bring all federal aid eligible roadways (both state and locally owned) up to excellent conditions.
- This chapter needs to be enhanced by furthering the discussion that such an investment (all up to excellent conditions) is not feasible. The cost to maintain or improve existing conditions at a feasible level of expenditure is missing and needs to be discussed. Since bringing all of these roadways up to excellent pavement conditions is not feasible, what needs to be defined is the amount that is feasible, that will maintain the current conditions, or make an incremental improvement over current pavement conditions. This cost estimate must then be shown in the final financial constraint analysis. One way to do this is to develop another table similar to Table 5-5, which shows a new set of “goal” conditions and much of the same information as Table 5-5 shows, but with a smaller cost estimate, which will necessarily come as the result of not being able to bring all of these roadways up to excellent conditions. This cost estimate will then need to be plainly shown in the comparison of costs versus revenues, to demonstrate financial constraint.

Chapter 7 – Passenger Rail

- No Comments.

Chapter 8 – Airports

- No Comments.

Chapter 13 – Transportation Safety

- Page 1 - The introduction section of this chapter could talk a bit about Safety being one of the 8 Planning Factors.
- Page 3 – Please define MEV, as it is used in MEV_{EPDO} .
- This chapter should refer to the fact that the SAFETEA-LU legislation created the Highway Safety Improvement Program (HSIP) and that, as a condition for states to access HSIP funding for eligible projects, states had to create Strategic Highway Safety

Plans (SHSPs). This is relevant because the reader should understand that what the SHSP Emphasis Areas are and that the most pressing regional safety needs align at least generally with the SHSP. This connection reinforces that there is coordination between the federal, state and local level, regarding safety planning.

- Has signal pre-emption been considered for providing emergency vehicles with priority, when reacting to an emergency? If so, this would be relevant to include as an example of regional safety planning efforts.

Chapter 14 – Transportation Security

- The introduction section of this chapter could talk a bit about Security being one of the 8 Planning Factors.
- Page 6 – The section entitled “Challenges for Large Scale Evacuations” refers the reader to a map at the end of the chapter. There was no such map, which may have been an addition to the document, following this chapter being uploaded to the web. Please check that this map is available.

Chapter 16 – Air Quality Conformity Determination

- Please rename this chapter to Air Quality Conformity Determination.
- There is no signatory page in this chapter. Please include a signatory page for all MPO members to sign, collectively certifying that the Plan is in conformance with the State Implementation Plan (SIP).

Chapter 17 – Recommended Projects

- All projects that are recommended for construction in a year following 2012 must include a 4% per year inflation factor applied to the cost. Projects shown to advance to construction beyond the 2011-2015 time frame currently show a 4% inflation factor. Not only should this inflation factor apply to ALL years beyond 2012, the 4% must be applied per year.
- The first timeframe shown is 2011-2015. Please correct this to show 2012-2015. Projects advancing to construction in 2011 should not have their 2011 costs considered in the 2012-2015 timeframe.
- The last timeframe now ends in 2036. Please correct this to end in 2035.
- Page 3 – In this version, The Bernardston, Rt. 10 bridge project (shown in the 2011-2015 timeframe) has an unknown estimated cost. Please ensure that this cost estimate is entered.
- Page 6 – Please ensure that the Deerfield projects (the I-91 northbound and southbound bridge rehabs) require 5 construction seasons to complete the entire project, since Advance Construction is shown to span 5 years.

- The Greenfield project I-91 over Rt. 5/10, must have a cost estimate entered. As written in the version currently under review, the entry of “not sure of amount” is provided. Please enter a valid cost estimate.
- Page 8 – The Gill-Montague Bridge rehab is shown to advance to construction in the 2016-2020 timeframe. Please denote the use of Advance Construction method of programming, but showing AC-1/x, where x represents the number of years that the project is scheduled to span over. Also, please contact me to ensure that 5 years will be necessary, and to let me know that, while the TPO intends to program funding during 2011, 12, 13, 14, and 16, what happens in 2015; why is there no funding programmed in 2015?
- Page 11 – The Leverette, Charlemont, Deerfield-Watery-Sunderland, Deerfield, and Greenfield projects must have a cost estimate represented if these projects are to be included in the recommended (i.e., financially constrained) portion of the RTP.
- Same comment for each project shown on Page 12. These projects cannot be represented like this for TPO consideration and endorsement. There is no way to demonstrate financial constraint without these costs being accounted for. This requires follow-up prior to requesting TPO endorsement.
- Pages 13 to 22 – As discussed above, please ensure ALL recommended projects have valid and reasonable cost estimates associated with them.

Chapter 18 – Financial Constraints

- Page 3 should show Table 18-2, not 17-2; just an apparent typo.
- It would be most helpful; to create a summary table showing all highway related costs associated with the RTP, for each 5-year timeframe, beginning with 2012-2015. The thought being that this bottom line number for each 5-year timeframe, and the aggregated sum of costs throughout the Plan’s horizon, can be easily compared to the funding expected to be available for the same timeframes. This comparison should be made explicitly to demonstrate financial constraint.

The following comments were previously sent via email, on July 14, 2011:

Ch1, P3

Under the SAFETEA-LU section, it may be appropriate to mention that SAFETEA-LU is currently being extended, while Congress works to pass a subsequent, long-term law to fund surface transportation. Funding levels in the next bill are uncertain and could be lower than those contained in SAFETEA-LU. This may affect the timeliness of delivering projects that address regional transportation priorities.

Ch 1, P5 (Table 1-1)

Nice chart with lots of great information. However there are a few entries that did not have a status update in the version I saw. Can an update be provided in the draft that goes out for public review and comment, for the following:

#9 - Advance Rt 2 Safety Improvements Ervingside, Farley, ...

#10- Plan for passenger rail from Franklin County to Boston

#13- Implement Safety and Traffic Flow Improvements on Rt 2 between I-91 and Rt 2 rotary

And, can the following be updated, providing an estimated timeframe of when these projects may begin:

#16- Construct Rt 2 West Safety Improvements...

#17- Construct a bikeway to connect Orange and Athol Downtowns

#18- Realign I-91 northbound exit 24 ramp

Ch2 p1

Public Participation

The discussion says that the legislation says the consultations should take into account plans, maps, and inventories of natural and or historic resources as available and applicable.

My question is- did this occur? Efforts that were made to have this type of consultation need to be documented in the RTP; specifically, with whom was this consultation held and what materials were referred to and shared in the meeting.

Ch2 p2

As I read the Initial Public Outreach section, I wanted to recognize the great job the FRCOG has done to make sure public input was incorporated. Nice Job!

Ch2 p4

Table 2-1

Reading through the Table, I did not see any representatives from resource agencies like Land Use Management, Historical Preservation, Corps of Engineers, etc... I did read the Consideration of Environmental and land Use Issues section and understand the efforts that were made to coordinate and consult with some of those agencies. I didn't read anything about whether long range plans were shared and discussed. It would be helpful to add that detail, or more closely describe what type of consultation was held. I'm looking for a better understanding of what level of involvement these entities had in helping to shape the document. A concise entry would be fine. Again, nice efforts.

Ch3

In the version of the document that I reviewed, it seems that this chapter will probably be further developed. As written, there are 11 goals with a very brief explanation of each stated goal. If this has not been further developed, I recommend providing the reader with more discussion that links the goals to how they might be realized and why their realization should be considered regional priorities.

Ch4

Figure 4-2 Please add the appropriate label of units being measured; i.e., Population (persons)

Figure 4-5 Presumably, the Unemployment Rate (Y axis) is being shown in %. These values should be labeled. An example would be to label the axis: Unemployment Rate (%)

Figure 4-6 Same comment; i.e., Employment (persons). Also, please include the source.

Ch4 Figure 4-8 Please label the Y axis; i.e., Residents

Ch5 – I have not received this chapter yet.

Ch6

It would be helpful to show a map of the region, which depicts the various freight corridors (rail and highway) with the approximate volume (\$s worth of freight moved, or trips made over the corridors) shown. This would help the reader to gain an appreciation of the volume of freight that moves in, out, and through the region. It might be beneficial to try and show desire lines along the various corridors / routes, where the lines' thickness depict the volume (trips), or value (of goods) being moved.

Ch9

Figure 9-1 – Please label the Y axis; i.e., Riders. Also, please include the source.

Figure 9-2 – Same comment.

Figure 9-3 – Same comment.

Ch10

While the version of the RTP I read did not include a chapter explicitly called *Livability*, it was evident to me that this chapter was the closest chapter to where this topic is discussed. FHWA has discussed that RTPs should contain a chapter on livability, and in the best situation, that would be the name of the chapter. I would recommend that Livability be used on the front of chapter 10, perhaps together with Bicycle and Pedestrian Facilities. It also seems that there could be some paragraph or two that could tie livability together with all of the various initiatives you wrote about, in this chapter. I read the references to the National Livable Communities Initiative, GreenDOT, the Global Warming Solutions and the Healthy Transportation Compact, but I think one or two paragraphs should be developed that tie all these programs and initiatives together, to result in making the Franklin County region more livable. There should also be a brief passage that describes specifically what types of projects have been done in the recent past, that address livability goals, and an explanation that takes that passage a step further to give the reader a glimpse of the kinds of initiatives that may be in store for the future of Franklin County. Ideally, I think the Livability chapter should discuss what the term means to the residents and stakeholders of the region and how that meaning translates into potential improvement projects. To me, that should be the foundation of the Livability “spin” of this chapter, then tie it into the other initiatives you have mentioned.

Ch11

No comments

Ch12 p7

Devoted to the topic of Climate Change, FHWA provided various advice and guidance for regions to consider, in order to appropriately address climate change initiatives. One strategy that was suggested, was for MPOs to complete an inventory of the transportation infrastructure within the region and consider what threats to the continued service of that infrastructure might exist. From the early version of the RTP I reviewed, it appears that this task has been undertaken at least partially, with regard to the transportation infrastructure that could be impacted by the failure of the Harriman Dam (see “plan for More Severe and Frequent Flooding in the Region section). This activity was recommended for the whole region. If this has not been done, it would be appropriate to include a discussion of such a region-wide effort, so that appropriate transportation / disaster planning can occur.

Recommendations section

The recommendation “Continue to promote sustainable and alternative forms of transportation to the *singly-occupied* motor vehicle... may need to be re-worded. Please review this passage again.

Ch13 - I have not received this chapter yet.

Ch14 - I have not received this chapter yet.

Ch15 – No comments.

For the Pavement Management Chapter-

Each region must identify in the RTP, what the existing pavement conditions are, explaining how the data was arrived at. If your region developed that data, you will be able to describe the data collection process and what the breakdown of the conditions are for Franklin County (i.e., 20% excellent, 35% good, 45% poor). Then, the MPO’s goals for the future pavement condition should be discussed; it may be a brief discussion like “this topic was discussed at an MPO meeting and the policy board decided that the region’s roadway conditions should be brought up to the following conditions - 35% excellent, 35% good, 30% poor). The last part of this discussion needs to be a discussion of what the estimated cost would be to the region, in order to

bring the pavement to the condition described by the MPO's goals. This will probably not be affordable to the region, so it would be prudent for this discussion to conclude with the most likely, affordable pavement condition, keeping financial responsibility and the need to address other region priorities in mind. The estimated cost that results from the most likely, affordable pavement condition the RTP will be planning for, should be used in the Financial Plan. This is exactly the kind of discussion and analysis that FHWA will be looking for in each of the RTPs. Please call if there are questions on this.

For the Safety Chapter –

I have urged all regions to explain that the Safety priorities in their region tie into the Mass DOT Strategic Highway Safety Plan's (SHSP) Emphasis Areas. While Mass DOT's safety priorities are broad enough to cover many areas of concern, from all around the state, Franklin County's safety concerns may be a smaller subset of those found in the SHSP. That's fine, but what the RTP safety section should do is discuss the region's safety priorities and make the connection to which Emphasis Area of the SHSP they align with. As previously mentioned, the Emphasis Areas are fairly broad in scope, so aligning the regional safety priorities with the SHSP Emphasis Areas (i.e., the State's safety priorities), should not be difficult. This connection can be done very simply in a tabular form or even parenthetically.

As a reminder – The Draft RTP should not be released without the Air Quality Conformity finding included. Same for the Financial Section. To reiterate recent direction from Mass DOT, this year, targets will not be reduced to observe the inflationary costs of projects beyond the 1st year of the TIP. Rather, the costs will be inflated by 4% per year after the 1st year. This will be important not only for the TIP, but the RTP also, as the first time band shown in the RTP's financial Plan shows the TIP years.

Appendix B Surveys

General Transportation Survey

Major Employer Transportation Survey

Transportation Survey

The results of this survey will help FRCOG update the Regional Transportation Plan by identifying transportation needs and project recommendations.

1. Please indicate whether you feel each of the following has improved, stayed the same, or gotten worse in the region over the past five years.

	Improved	Worsened	Stayed the Same	Unsure/No Opinion
Local Roads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Major Roads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roadway Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bridges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Truck Freight Transport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rail Freight Transport Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regional Airport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public Bus Transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transportation for the Disabled or Elderly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternatives to Single-Occupancy Car Travel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sidewalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Crosswalks and Other Safety Improvements for Pedestrians	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Off-Road Bicycle Routes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On-Road Bicycle Improvements(ex. Bike Lanes & Bike Route Signage)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use of Technology (Intelligent Transportation Systems (ITS) to Monitor & Improve Traffic Conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Quality & Vehicle Emissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)				

2. Do you ever use Park and Ride lots (formal or informal ones)?

Yes ☐ No ☐

3. If you do use a Park and Ride Lot, where do you park?

This Survey can also be completed online at www.frcog.org, under "What's New?".

Franklin County Regional Transportation Plan Update Survey

4. How do you usually travel during your daily routine? Please provide the number of days per week that you use each of the following types of transportation.

Number of Days per Week

Drive Alone	<input type="text"/>
Carpool with 1 other person	<input type="text"/>
Carpool with 2 other persons	<input type="text"/>
Carpool with 3 other persons	<input type="text"/>
Carpool with more than 3 persons	<input type="text"/>
Ride a bus	<input type="text"/>
Walk	<input type="text"/>
Bicycle	<input type="text"/>
Motorcycle	<input type="text"/>
Participate in a rideshare	<input type="text"/>
Other (please specify)	<input type="text"/>

5. Generally, how far is your daily commute (one way) in miles?

6. Where do you live (town name)? (optional) _____

7. What are your top three recommendations for transportation improvements and projects in the region over the next five to 10 years?

- 1) _____
- 2) _____
- 3) _____

8. Do you have any comments that would help us as we update the Regional Transportation Plan?

9. If you would like to be included on our mailing list for the 2011 Regional Transportation Plan planning process and draft materials, please fill out the information below, or contact Megan Rhodes, at mrhodes@frcog.org, (413) 774-1194 ext. 110.

Name: _____

Mailing Address: _____

Email Address: _____

Please return this survey to 278 Main St. 4th Floor, Greenfield, MA 01301 or by fax at (413)774-1195.

This Survey can also be completed online at www.frcog.org, under "What's New?".



EMPLOYER REGIONAL TRANSPORTATION SURVEY

1. Business Name: _____
2. Physical Address : _____
3. Brief Description Business/Industry: _____
4. Type of Facility: [☐] Factory [☐] Office [☐] Warehouse [☐] Other _____
5. Estimated 2009 Employees: Full-time _____ Part-time _____
 Note: The FRCOG and Franklin County Chamber of Commerce produce a list of major employers and manufacturers in the region. The above employment data will be included in this list. If you do not want employment data used in this manner, please check the following box [☐].
6. Estimated 2009 Total Annual Payroll: _____ (Optional)
 Note: Data collected from question #6 will not be released on an individual business basis.
7. Do you use the following to do business? [☐] Truck [☐] Rail [☐] Local Airports [☐] None of these
8. What is your primary means of transporting goods (for either import or export)? _____
9. Is your facility located adjacent to railroad tracks?
 If yes, do you use it? _____
 If, not would you like to? _____
10. Are employees able to take a bus or van to work? _____
 If no, would there be interest? _____
11. Comments or recommendations about transportation in Franklin County? _____

12. Survey completed by:
 Name and Title: _____
 In case of question, telephone or email: _____

SURVEY FORM CAN ALSO BE FILLED OUT ONLINE AT
<http://www.surveymonkey.com/s/transp>.

Please return this survey form:

By mail: FRCOG, 425 Main Street, Greenfield, MA 01301, Attn: Megan Rhodes
 By Email: mrhodes@frcog.org, By Fax: (413)774-1195
 Questions? Call Megan Rhodes at (413)774-1194 x110

Appendix C Demographic Trends and Projections

Appendix Table 1: Labor Force, Employment, and Unemployment by Town, 2009

Appendix Table 2: Population Forecasts for Franklin County Towns, 2000 to 2035

Appendix Table 3: Projected Town Population Distributions by Age Group, 2010

Appendix Table 4: Projected Town Population Distributions by Age Group, 2020

Appendix Table 5: Projected Town Population Distributions by Age Group, 2030

Appendix Table 6: Projected Town Population Distributions by Age Group, 2035

Appendix Table 7: Employment Forecasts for Franklin County Towns, 2009 to 2035

Appendix Table 1: Labor Force, Employment, and Unemployed by Town, 2009

Location of Residence	Labor Force	Employed Persons	Unemployed Persons	Unemployment Rate
Ashfield	1,108	1,044	64	5.8%
Bernardston	1,227	1,133	94	7.7%
Buckland	1,106	1,061	45	4.1%
Charlemont	781	723	58	7.4%
Colrain	999	920	79	7.9%
Conway	1,150	1,092	58	5.0%
Deerfield	2,796	2,583	213	7.6%
Erving	854	772	82	9.6%
Gill	806	740	66	8.2%
Greenfield	9,098	8,306	792	8.7%
Hawley	168	157	11	6.5%
Heath	458	430	28	6.1%
Leverett	1,035	980	55	5.3%
Leyden	478	448	30	6.3%
Monroe	27	23	4	14.8%
Montague	4,319	3,920	399	9.2%
New Salem	567	522	45	7.9%
Northfield	1,742	1,624	118	6.8%
Orange	3,835	3,415	420	11.0%
Rowe	186	169	17	9.1%
Shelburne	1,108	988	120	10.8%
Shutesbury	1,128	1,069	59	5.2%
Sunderland	2,285	2,164	121	5.3%
Warwick	358	327	31	8.7%
Wendell	589	547	42	7.1%
Whately	959	912	47	4.9%
Franklin County	39,167	36,069	3,098	7.9%

* The labor force refers to the number of residents in a town who are either employed (anywhere) or who are actively looking for work.

Source: Massachusetts Department of Workforce Development, 2009

Appendix Table 2: Population Forecasts for Franklin County Towns, 2000 to 2035

Geographic Area	2000 U.S. Census Population	2009 U.S. Census Population	2010 U.S. Census Population	2017 Projected Population	2020 Projected Population	2025 Projected Population	2030 Projected Population	2035 Projected Population	2000-2035 Population Change	
									Number	Percent %
Ashfield	1,800	1,827	1,737	1,790	1,810	1,820	1,860	1,870	70	3.9%
Bernardston	2,155	2,235	2,129	2,200	2,220	2,230	2,270	2,300	145	6.7%
Buckland	1,991	1,989	1,902	1,960	1,980	2,000	2,030	2,050	59	3.0%
Charlemont	1,358	1,386	1,266	1,310	1,320	1,330	1,350	1,370	12	0.9%
Colrain	1,813	1,855	1,671	1,720	1,740	1,750	1,780	1,800	(13)	-0.7%
Conway	1,809	1,899	1,897	1,960	1,980	1,990	2,030	2,050	241	13.3%
Deerfield	4,750	4,692	5,125	5,290	5,340	5,380	5,470	5,530	780	16.4%
Erving	1,467	1,549	1,800	1,860	1,870	1,890	1,920	1,940	473	32.2%
Gill	1,363	1,396	1,500	1,550	1,560	1,570	1,600	1,620	257	18.9%
Greenfield	18,168	17,537	17,456	18,000	18,200	18,300	18,600	18,800	632	3.5%
Hawley	336	337	337	350	350	360	365	370	34	10.1%
Heath	805	796	706	730	730	740	760	770	(35)	-4.3%
Leverett	1,663	1,787	1,851	1,910	1,930	1,940	1,980	2,000	337	20.3%
Leyden	772	809	711	730	730	750	760	770	(2)	-0.3%
Monroe	93	96	121	120	120	130	130	135	42	45.2%
Montague	8,489	8,175	8,437	8,700	8,780	8,850	9,010	9,100	611	7.2%
New Salem	929	957	990	1,020	1,030	1,040	1,060	1,070	141	15.2%
Northfield	2,951	3,311	3,032	3,130	3,160	3,180	3,240	3,270	319	10.8%
Orange	7,518	7,699	7,839	8,080	8,160	8,230	8,370	8,460	942	12.5%
Rowe	351	347	393	400	400	420	425	430	79	22.5%
Shelburne	2,058	2,031	1,893	1,950	1,970	1,990	2,020	2,040	(18)	-0.9%
Shutesbury	1,810	1,836	1,771	1,830	1,840	1,860	1,890	1,910	100	5.5%
Sunderland	3,777	3,909	3,684	3,800	3,840	3,870	3,930	3,970	193	5.1%
Warwick	750	748	780	800	800	820	840	845	95	12.7%
Wendell	986	1,002	848	870	880	890	910	920	(66)	-6.7%
Whately	1,573	1,573	1,496	1,540	1,560	1,570	1,600	1,610	37	2.4%
Franklin County	71,535	71,778	71,372	73,600	74,300	74,900	76,200	77,000	5,465	7.6%

Sources: 2010 Population: U.S. Census Redistricting Summary Data; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix Table 3: Projected Town Population Distributions by Age Group, 2010

Geographic Area	2010 Census Population	2010 Population in each Age Group					Percentage of 2010 Population in each Age Group				
		Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over	Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over
Ashfield	1,737	315	177	137	903	204	18.2%	10.2%	7.9%	52.0%	11.7%
Bernardston	2,129	333	273	167	1,009	347	15.6%	12.8%	7.8%	47.4%	16.3%
Buckland	1,902	328	288	155	877	254	17.3%	15.1%	8.1%	46.1%	13.4%
Charlemont	1,266	250	164	136	568	148	19.7%	13.0%	10.7%	44.9%	11.7%
Colrain	1,671	346	207	171	740	207	20.7%	12.4%	10.2%	44.3%	12.4%
Conway	1,897	348	222	149	996	182	18.3%	11.7%	7.9%	52.5%	9.6%
Deerfield	5,125	858	569	492	2,495	712	16.7%	11.1%	9.6%	48.7%	13.9%
Erving	1,800	297	225	228	800	250	16.5%	12.5%	12.7%	44.4%	13.9%
Gill	1,500	266	183	105	752	193	17.7%	12.2%	7.0%	50.2%	12.9%
Greenfield	17,456	2,824	2,402	1,923	7,233	3,074	16.2%	13.8%	11.0%	41.4%	17.6%
Hawley	337	60	28	29	170	51	17.7%	8.4%	8.5%	50.3%	15.0%
Heath	706	145	92	54	341	74	20.5%	13.1%	7.7%	48.3%	10.4%
Leverett	1,851	311	258	115	958	209	16.8%	14.0%	6.2%	51.8%	11.3%
Leyden	711	145	87	48	374	56	20.4%	12.3%	6.8%	52.6%	7.9%
Monroe	121	21	18	11	49	21	17.7%	15.2%	8.9%	40.8%	17.3%
Montague	8,437	1,470	1,096	927	3,539	1,405	17.4%	13.0%	11.0%	41.9%	16.7%
New Salem	990	183	87	77	543	99	18.5%	8.8%	7.8%	54.9%	10.0%
Northfield	3,032	584	393	258	1,386	411	19.3%	13.0%	8.5%	45.7%	13.6%
Orange	7,839	1,580	1,049	730	3,344	1,136	20.2%	13.4%	9.3%	42.7%	14.5%
Rowe	393	57	35	20	206	74	14.6%	9.0%	5.0%	52.5%	18.9%
Shelburne	1,893	274	236	126	868	389	14.5%	12.5%	6.6%	45.8%	20.6%
Shutesbury	1,771	370	234	125	938	104	20.9%	13.2%	7.1%	52.9%	5.9%
Sunderland	3,684	507	946	603	1,314	314	13.8%	25.7%	16.4%	35.7%	8.5%
Warwick	780	150	93	57	393	87	19.2%	11.9%	7.3%	50.4%	11.2%
Wendell	848	150	127	95	437	40	17.6%	15.0%	11.2%	51.5%	4.7%
Whately	1,496	242	170	130	768	186	16.2%	11.4%	8.7%	51.3%	12.4%
Franklin County	71,372	12,414	9,659	7,068	32,001	10,226	17.4%	13.5%	9.9%	44.8%	14.3%

Sources: 2010 Population: U.S. Census Bureau, Redistricting Summary Data; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix Table 4: Projected Town Population Distributions by Age Group, 2020

Geographic Area	2020 Projected Population	2020 Population in each Age Group					Percentage of 2020 Population in each Age Group				
		Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over	Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over
Ashfield	1,810	325	159	160	894	271	18.0%	8.8%	8.9%	49.4%	15.0%
Bernardston	2,220	343	253	195	995	434	15.4%	11.4%	8.8%	44.8%	19.6%
Buckland	1,980	338	272	180	862	329	17.1%	13.7%	9.1%	43.5%	16.6%
Charlemont	1,320	258	153	154	558	197	19.5%	11.6%	11.7%	42.3%	14.9%
Colrain	1,740	357	191	194	726	272	20.5%	11.0%	11.2%	41.7%	15.6%
Conway	1,980	359	204	174	989	254	18.1%	10.3%	8.8%	49.9%	12.8%
Deerfield	5,340	883	518	563	2,461	915	16.5%	9.7%	10.6%	46.1%	17.1%
Erving	1,870	305	208	254	783	321	16.3%	11.1%	13.6%	41.8%	17.1%
Gill	1,560	274	168	124	742	252	17.5%	10.8%	8.0%	47.6%	16.1%
Greenfield	18,200	2,908	2,249	2,177	7,070	3,797	16.0%	12.4%	12.0%	38.8%	20.9%
Hawley	350	61	25	33	167	64	17.5%	7.0%	9.5%	47.7%	18.3%
Heath	730	148	85	63	334	100	20.3%	11.7%	8.6%	45.7%	13.7%
Leverett	1,930	320	242	138	949	281	16.6%	12.5%	7.1%	49.2%	14.6%
Leyden	730	147	79	57	365	81	20.2%	10.9%	7.8%	50.0%	11.1%
Monroe	120	21	17	12	46	25	17.5%	13.8%	9.8%	38.2%	20.6%
Montague	8,780	1,512	1,017	1,047	3,456	1,748	17.2%	11.6%	11.9%	39.4%	19.9%
New Salem	1,030	189	76	90	538	137	18.3%	7.4%	8.8%	52.3%	13.3%
Northfield	3,160	602	365	298	1,363	532	19.1%	11.6%	9.4%	43.1%	16.8%
Orange	8,160	1,628	977	837	3,269	1,448	20.0%	12.0%	10.3%	40.1%	17.7%
Rowe	400	58	30	24	200	89	14.4%	7.6%	5.9%	49.9%	22.2%
Shelburne	1,970	281	218	149	852	469	14.3%	11.1%	7.6%	43.2%	23.8%
Shutesbury	1,840	381	217	148	926	168	20.7%	11.8%	8.0%	50.3%	9.1%
Sunderland	3,840	521	932	665	1,270	453	13.6%	24.3%	17.3%	33.1%	11.8%
Warwick	800	152	84	66	382	115	19.0%	10.5%	8.3%	47.8%	14.4%
Wendell	880	154	119	107	430	70	17.4%	13.6%	12.2%	48.9%	7.9%
Whately	1,560	249	156	150	760	245	16.0%	10.0%	9.6%	48.7%	15.7%
Franklin County	74,300	12,774	9,014	8,059	31,387	13,066	17.2%	12.1%	10.8%	42.2%	17.6%

Sources: 2010 Population: U.S. Census Bureau, Redistricting Summary Data; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix Table 5: Projected Town Population Distributions by Age Group, 2030

Geographic Area	2030 Projected Population	2030 Population in each Age Group					Percentage of 2030 Population in each Age Group				
		Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over	Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over
Ashfield	1,860	339	158	139	872	352	18.2%	8.5%	7.5%	46.9%	18.9%
Bernardston	2,270	357	252	168	960	534	15.7%	11.1%	7.4%	42.3%	23.5%
Buckland	2,030	352	272	156	832	418	17.4%	13.4%	7.7%	41.0%	20.6%
Charlemont	1,350	268	152	139	537	255	19.8%	11.2%	10.3%	39.8%	18.9%
Colrain	1,780	370	190	174	698	348	20.8%	10.7%	9.8%	39.2%	19.6%
Conway	2,030	374	203	151	962	340	18.4%	10.0%	7.4%	47.4%	16.8%
Deerfield	5,470	920	512	501	2,383	1,153	16.8%	9.4%	9.2%	43.6%	21.1%
Erving	1,920	319	207	234	755	405	16.6%	10.8%	12.2%	39.3%	21.1%
Gill	1,600	285	167	105	721	321	17.8%	10.5%	6.6%	45.0%	20.1%
Greenfield	18,600	3,026	2,237	1,967	6,756	4,615	16.3%	12.0%	10.6%	36.3%	24.8%
Hawley	365	65	24	30	165	81	17.8%	6.7%	8.1%	45.2%	22.2%
Heath	760	156	86	55	328	134	20.6%	11.3%	7.3%	43.2%	17.6%
Leverett	1,980	334	242	114	924	366	16.9%	12.2%	5.7%	46.7%	18.5%
Leyden	760	156	80	48	361	115	20.5%	10.5%	6.4%	47.5%	15.1%
Monroe	130	23	18	11	46	32	17.8%	13.5%	8.4%	35.7%	24.5%
Montague	9,010	1,578	1,014	950	3,319	2,150	17.5%	11.3%	10.5%	36.8%	23.9%
New Salem	1,060	197	75	78	527	183	18.6%	7.1%	7.4%	49.7%	17.2%
Northfield	3,240	627	364	261	1,316	673	19.3%	11.2%	8.1%	40.6%	20.8%
Orange	8,370	1,694	975	743	3,142	1,816	20.2%	11.6%	8.9%	37.5%	21.7%
Rowe	425	63	31	19	202	111	14.7%	7.2%	4.5%	47.4%	26.1%
Shelburne	2,020	294	217	125	823	561	14.6%	10.8%	6.2%	40.7%	27.8%
Shutesbury	1,890	397	217	125	904	247	21.0%	11.5%	6.6%	47.8%	13.1%
Sunderland	3,930	544	941	626	1,200	618	13.9%	23.9%	15.9%	30.5%	15.7%
Warwick	840	162	86	58	380	154	19.3%	10.2%	6.9%	45.3%	18.4%
Wendell	910	161	120	98	422	108	17.7%	13.2%	10.8%	46.4%	11.9%
Whately	1,600	260	154	132	739	314	16.3%	9.6%	8.2%	46.2%	19.7%
Franklin County	76,200	13,321	8,994	7,207	30,274	16,403	17.5%	11.8%	9.5%	39.7%	21.5%

Sources: 2010 Population: U.S. Census Bureau, Redistricting Summary Data; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix Table 6: Projected Town Population Distributions by Age Group, 2035

Geographic Area	2035 Projected Population	2035 Population in each Age Group					Percentage of 2035 Population in each Age Group				
		Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over	Under Age 14	Age 15-24	Age 25-34	Age 35-64	Age 65 & over
Ashfield	1,870	344	155	127	853	391	18.4%	8.3%	6.8%	45.6%	20.9%
Bernardston	2,300	365	251	154	944	586	15.9%	10.9%	6.7%	41.0%	25.5%
Buckland	2,050	359	271	143	814	462	17.5%	13.2%	7.0%	39.7%	22.6%
Charlemont	1,370	274	152	131	528	286	20.0%	11.1%	9.6%	38.5%	20.9%
Colrain	1,800	377	189	163	683	388	21.0%	10.5%	9.1%	37.9%	21.5%
Conway	2,050	381	201	138	946	384	18.6%	9.8%	6.7%	46.1%	18.7%
Deerfield	5,530	939	509	468	2,339	1,275	17.0%	9.2%	8.5%	42.3%	23.1%
Erving	1,940	325	206	223	738	447	16.7%	10.6%	11.5%	38.1%	23.1%
Gill	1,620	291	167	95	709	357	18.0%	10.3%	5.9%	43.8%	22.1%
Greenfield	18,800	3,086	2,230	1,857	6,591	5,035	16.4%	11.9%	9.9%	35.1%	26.8%
Hawley	370	66	24	27	163	89	18.0%	6.5%	7.4%	43.9%	24.2%
Heath	770	160	86	51	323	151	20.7%	11.2%	6.6%	41.9%	19.6%
Leverett	2,000	340	241	101	908	410	17.0%	12.1%	5.1%	45.4%	20.5%
Leyden	770	159	80	44	356	131	20.6%	10.4%	5.7%	46.3%	17.1%
Monroe	135	24	18	10	46	36	18.0%	13.3%	7.7%	34.4%	26.5%
Montague	9,100	1,607	1,009	896	3,237	2,351	17.7%	11.1%	9.8%	35.6%	25.8%
New Salem	1,070	201	74	71	519	205	18.7%	6.9%	6.7%	48.5%	19.2%
Northfield	3,270	637	362	241	1,287	744	19.5%	11.1%	7.4%	39.3%	22.7%
Orange	8,460	1,725	972	692	3,069	2,003	20.4%	11.5%	8.2%	36.3%	23.7%
Rowe	430	64	30	16	198	121	14.9%	7.1%	3.8%	46.2%	28.1%
Shelburne	2,040	300	216	112	805	607	14.7%	10.6%	5.5%	39.5%	29.7%
Shutesbury	1,910	404	216	114	889	287	21.2%	11.3%	5.9%	46.6%	15.0%
Sunderland	3,970	556	944	605	1,162	703	14.0%	23.8%	15.2%	29.3%	17.7%
Warwick	845	164	85	52	372	172	19.4%	10.0%	6.2%	44.0%	20.4%
Wendell	920	165	120	93	415	127	17.9%	13.1%	10.1%	45.1%	13.9%
Whately	1,610	264	153	122	723	348	16.4%	9.5%	7.5%	44.9%	21.6%
Franklin County	77,000	13,577	8,961	6,746	29,617	18,095	17.6%	11.6%	8.8%	38.5%	23.5%

Sources: 2010 Population: U.S. Census Bureau, Redistricting Summary Data; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix Table 7: Employment Forecasts for Franklin County Towns, 2009 to 2035

Geographic Area	2009 ES-202 Employment	2010 Projected Employment	2017 Projected Employment	2020 Projected Employment	2025 Projected Employment	2030 Projected Employment	2035 Projected Employment	2009-2035 Employment Change	
								Number	Percent %
Ashfield	245	245	250	250	260	260	270	25	10%
Bernardston	338	340	340	350	355	360	370	32	9%
Buckland	367	370	375	380	390	400	400	33	9%
Charlemont	405	405	410	420	430	440	445	40	10%
Colrain	191	190	190	200	200	210	210	19	10%
Conway	208	210	215	220	220	220	230	22	11%
Deerfield	4,416	4,440	4,480	4,560	4,650	4,750	4,860	444	10%
Erving	275	280	280	280	290	295	300	25	9%
Gill	291	290	300	300	305	310	320	29	10%
Greenfield	9,682	9,740	9,810	10,000	10,190	10,420	10,650	968	10%
Hawley	19	20	20	20	20	20	20	1	5%
Heath	64	60	65	65	70	65	70	6	9%
Leverett	195	200	200	200	205	210	210	15	8%
Leyden	65	65	70	70	65	70	70	5	8%
Monroe	18	15	20	20	20	20	20	2	11%
Montague	2,816	2,830	2,850	2,910	2,960	3,030	3,100	284	10%
New Salem	147	145	150	150	155	155	160	13	9%
Northfield	887	890	900	920	930	950	975	88	10%
Orange	1,928	1,940	1,950	1,990	2,030	2,080	2,120	192	10%
Rowe	112	110	110	120	120	120	120	8	7%
Shelburne	743	750	750	770	780	800	820	77	10%
Shutesbury	147	150	150	150	155	155	160	13	9%
Sunderland	861	870	870	890	910	930	950	89	10%
Warwick	64	65	65	65	65	70	70	6	9%
Wendell	147	150	150	150	155	160	160	13	9%
Whately	1,019	1,030	1,030	1,050	1,070	1,100	1,120	101	10%
Franklin County	25,650	25,800	26,000	26,500	27,000	27,600	28,200	2,550	10%

Sources: 2000 Population: U.S. Census Bureau; Population projections: MassDOT, developed in coordination with FRCOG, 2011.

Appendix D Glossary of Transportation Acronyms

3C	Continuing, Cooperative, and Comprehensive transportation planning and programming	Name of Franklin County's primary transportation planning grant.
AASHTO	American Association of State Highway and Transportation Officials	An agency that, among other functions, sets standards for roads, highways and bridges.
ADA	American with Disabilities Act	Federal legislation prohibiting discrimination on the basis of disability.
AADT	Average Annual Daily Traffic	Average 24-hour traffic volume using a particular roadway over an entire year.
ADT	Average Daily Traffic	Average 24-hour traffic volume using a particular roadway.
AGR	Average Growth Rate	Annual growth rate for traffic.
AIP	Airport Improvement Program	Federal program run through the FAA that provides grants to public agencies for the planning and development of public-use airports.
ALP	Airport Layout Plan	A scaled drawing depicting existing and future facilities and property necessary for the operation and development of the airport.
ANR	Approval-Not-Required	A property lot that does not require a site plan review for development if it meets the town's requirements of abutting a qualified way and meets frontage and area requirements.
ASMP	Airport Safety and Maintenance Program	A program that is meant to provide a safe and operable facility for the least possible cost.
BLS	U.S. Bureau of Labor Statistics	Principal fact-finding agency for the Federal Government in the broad field of labor economics and statistics.
BRTA	Berkshire Regional Transit Authority	The transit authority in Berkshire County.

BTS	Bureau of Transportation Statistics	Part of the U.S. Department of Transportation, BTS compiles, analyzes, and makes accessible information on the Nation's transportation systems.
CAAA	Clean Air Act Amendments	Federal legislation that sets levels for air pollutants. In regions where these levels are not met, methods must be devised and enacted within a specified time period to meet standards.
CDAG	Community Development Action Grant	Federal program that provides funding for publicly owned or managed projects in order to stimulate economic development activities that will leverage private investment, create/retain jobs for low- and moderate-income persons, and address the needs of deteriorated and disinvested neighborhoods.
CEDS	Comprehensive Economic Development Strategy	Program that provides coordinated regional economic development planning for the twenty-six towns in Franklin County plus the towns of Amherst, Athol and Phillipston.
CEM	Comprehensive Emergency Management Plans	Plans designed to guide the organizational behavior before, during and after a disaster in order to mitigate, prepare for, respond to, and recover from the effects of natural, technological and human-caused hazards.
CERT	Community Emergency Response Teams	Teams of organized volunteers that are trained to assist emergency response staff when a disaster occurs.
CMAQ	Congestion Mitigation and Air Quality Improvement Program	A funding category of TEA-21 and SAFETEA-LU, specifically to be used for projects that reduce or prevent an increase in auto emissions.
CO	Carbon monoxide	Air pollutant; auto tailpipe emission.
CTAA	Community Transportation Association of America	Non-profit association that promotes an accessible and mobile society and supports transit services in rural areas.
CTS	Community Transit Services	Private transit provider operating in the Athol-Orange area; provider is part of the CTAA.

DCR	Department of Conservation and Recreation	State agency that is responsible for land management and natural resource planning.
DCS	Division of Conservation Services	Part of the Massachusetts Executive Office of Energy and Environmental Affairs, provides technical and financial assistance to farmers as well as public and private land owners in matters dealing with farm plans or sediment and erosion control.
DDS	Department of Developmental Services	State agency responsible for providing assistance in job placement, transportation, housing, or intense levels of treatment, monitoring and care for individuals with intellectual disabilities.
DEP	Department of Environmental Protection	State agency responsible for ensuring State compliance with CAAA and other related federal regulations.
DHCD	Department of Housing and Community Development	State agency responsible for overseeing home ownership, low-income housing assistance, fair housing laws, homelessness, aid for distressed neighborhoods, and housing development programs.
DMA	Division of Medical Assistance	State agency responsible for administering <u>Medicaid</u> and the <u>State Children's Health Insurance Program</u> .
DOT	Department of Transportation	Federal cabinet-level agency that sets standards and policies for all modes of transportation.
DRWA	Deerfield River Watershed Association	Non-profit organization that works to preserve, protect, and enhance the natural resources of the Deerfield River watershed in south-eastern Vermont and north-western Massachusetts.
DTA	Department of Transitional Assistance	State agency responsible for administering public assistance programs for needy citizens of the Commonwealth
DWD	Department of Workforce Development	State agency (formerly DET) that provides services in employment, training, technical and further education and youth affairs.

EDA	Economic Development Administration	Federal agency that promotes economic development.
EIR	Environmental Impact Report	Complete assessment of the environmental impacts and benefits of a proposed project to be fully disclosed and reviewed by public agencies, project proponents and the general public.
ENF	Environmental Notification Form	Initial assessment of the environmental impacts of a proposed project. Upon review of an ENF, the Secretary of the Executive Office of Environmental Affairs determines whether an EIR is required.
EPDO	Equivalent Property Damage Only	Method of evaluating the safety of a roadway location that takes into account total number of crashes at a location and the severity of each crash
EOEEA	Executive Office of Energy and Environmental Affairs.	Massachusetts cabinet-level agency that sets standards and policies related to energy and the environment. In 2007, the former EOE (Executive Office of Environmental Affairs) was expanded to include the Department of Public Utilities and the Division of Energy Resources.
EOPS	Executive Office of Public Safety	State agency responsible for public safety.
EPA	Environmental Protection Agency	Federal agency responsible for ensuring State compliance with CAAA other related federal regulations.
EPCRA	Emergency Planning and Community Right to Know Act	Federal law designed to help local communities prepare emergency plans and protect public health, safety, and the environment from chemical hazards.
EPZ	Emergency Planning Zone	Approximately ten miles surrounding a nuclear power plant. Within this zone, specific emergency protective plans have been developed.
FCRN	Franklin County Resource Network	Organization that serves as an information clearinghouse and source of mutual support for a diverse group of community service agency staff.

FAA	Federal Aviation Administration	Federal agency primarily responsible for the advancement, safety and regulation of civil aviation.
FCTPO	Franklin County Transportation Planning Organization	Organization responsible for Franklin County's transportation planning.
FEMA	Federal Emergency Management Agency	Agency of the US government tasked with Disaster Mitigation, Preparedness, Response & Recovery planning.
FHWA	Federal Highway Administration	Federal agency responsible for administering federal highway funding and ensuring State compliance with SAFETEA-LU and other related federal regulations.
FRA	Federal Railroad Administration	Federal agency responsible for safe and environmentally sound rail transportation.
FRCOG	Franklin Regional Council of Governments	Agency that serves the 26 municipalities of Franklin County.
FRPB	Franklin Regional Planning Board	Advisory Board to the Planning staff and the FRCOG comprised of local elected officials, their designees, and at-large members.
FRTA	Franklin Regional Transit Authority	Primary transit authority operating in Franklin County.
FTA	Federal Transit Authority	Federal agency responsible for administering federal transit funding and ensuring State compliance with SAFETEA-LU, ADA, and other related federal regulations.
FY	Fiscal Year	The state fiscal year runs from July 1 st to June 30 th .
FFY	Federal Fiscal Year	The federal fiscal year begins on October 1 st and ends on September 30 th .
GIS	Geographic Information Systems	Computerized mapping hardware and software that creates maps which link geographic information and data stored in a database.

HMEP	Regional Hazardous Materials Emergency Plan	Planning and guidance document that provides resources and recommendations for the development of town-level comprehensive emergency management plans.
HPMS	Highway Performance Monitoring System	National level highway information system that includes data on the extent, condition, performance, use, and operating characteristics of the Nation's highways.
HSIP	Highway Safety Improvement Program	Program that outlines the components for the planning, implementation and evaluation of safety programs and projects.
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991	Former federal transportation legislation that restructured and increased transportation funding and required regional and local input into long term, comprehensive transportation planning. ISTEA was in effect from 1991 to 1997.
ITS	Intelligent Transportation Systems	High-tech communication and computer systems that connect, coordinate and control transportation systems.
JARC	Job Access and Reverse Commute	Federal program designed to increase the transportation options of low-income workers.
MAA	Mutual Aid Agreement	A mutual aid agreement is a mutual understanding or promise between jurisdictions, organizations, and companies to help each other during a disaster or emergency.
MAC	Massachusetts Aeronautics Commission	Group of 12 professionals providing services to the aviation community and the citizens of Massachusetts.
MARPA	Massachusetts Association of Regional Planning Agencies	Statewide organization composed of the commonwealth's 13 regional planning agencies.
MART	Montachusett Area Regional Transit Authority	Transit authority for the Montachusett area.

MEMA	Massachusetts Emergency Management Agency	State agency responsible for coordinating all emergency response activities in the state from possible terrorist strikes, to hazardous spills, to flooding.
MISER	Massachusetts Institute of Social and Economic Research	Former research institute at the University of Massachusetts; it is now part of the Donahue Institute, also based at UMass. It collected and analyzed information from the U.S. Census and other data sources and made it available to the public.
MPO	Metropolitan Planning Organization	Transportation planning body that serves a population of 200,000 people or more. Although the Franklin County Transportation Planning Organization is not an MPO, it acts as one for transportation planning activities in the Franklin Region.
MOU	Memorandum of Understanding	Legal document describing a <u>bilateral agreement</u> between parties.
MRC	Medical Reserve Corps	Group that establishes teams of local volunteer medical and public health professionals who can contribute their skills and expertise throughout the year and during times of community need.
MRPC	Montachusett Regional Planning Commission	Regional planning body for the 21 municipalities of the Montachusett Region.
NAAQS	National Ambient Air Quality Standards	The EPA sets <u>National Ambient Air Quality Standards</u> (40 CFR part 50) for pollutants considered harmful to public health and the environment.
NBI	National Bridge Inventory	Database, compiled by the <u>Federal Highway Administration</u> , with information on all <u>bridges</u> and <u>tunnels</u> in the <u>United States</u> that have roads passing above or below.
NECR	New England Central Railroad	Subsidiary of <u>RailAmerica</u> . The railroad runs from <u>New London, Connecticut</u> , to <u>East Alburg, Vermont</u> .

NESEA	Northeast Sustainable Energy Association	Non-profit association that works to bring clean electricity, green transportation, and healthy, efficient buildings into everyday use.
NFA	Non-Federal Aid	State funding for transportation projects as allocated within Transportation Bond Bills.
NHS	National Highway System	A funding category of SAFETEA-LU specifically to be used for interstates and urban and rural principal arterials.
NOX	Nitrous Oxide	Air pollutant; auto tailpipe emission.
NYSDOT	New York State Department of Transportation	Agency that coordinates operation of transportation facilities and services for the State of New York.
O3	Ozone	Air pollutant; auto tailpipe emission. Ozone is also known as smog.
PMS	Pavement Management System	System of determining the most cost-effective way of managing a town's road system.
PVPC	Pioneer Valley Planning Commission	Regional planning body for 43 cities and towns in Hampshire and Hampden Counties.
PVTA	Pioneer Valley Transit Authority	A transit authority based in Hampshire and Hampden Counties which provides fixed-route and paratransit services to some Franklin County towns.
RACT	Reasonably Available Control Technology	Control technology that is reasonably available, and both technologically and economically feasible. Usually applied to existing sources in non-attainment areas; in most cases is less stringent than new source performance standards.
REPC	Franklin County Regional Emergency Planning Committee	Committee that serves as the coordinating body for a regionally established Citizen Emergency Response Team (formerly known as the Local Emergency Planning Committee, LEPC)
ROW	Right of Way	An <u>easement</u> that permits one to travel across the <u>real property</u> of another, or the strip of land subject to such an easement.

RPA	Regional Planning Agency	The Franklin Regional Council of Governments is a Regional Planning Agency. As an RPA, the FRCOG's role is to be a census data center, to provide regional planning services, and to provide local municipalities with assistance.
RTIC	Regional Traveler Information Center	This project will design, build and operate a Regional Traveler Information Center (RTIC) located at the University of Massachusetts in Amherst that will collect and disseminate traffic, transit and tourist information for government and public use.
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users	The current federal transportation legislation. In content, this legislation is very similar to its predecessors ISTEA and TEA-21.
SAIPE	Small Area Income and Poverty Estimates	A program that provides more current estimates of selected income and poverty statistics than the most recent decennial census.
SHSP	Strategic Highway Safety Plan	A Federal requirement of SAFETEA-LU, 23 USC 148, and a major part of the core Highway Safety Improvement Program (HSIP).
SIP	State Implementation Plan	A document that describes how, and guarantees that, the State conforms to the requirements of the Clean Air Act Amendments.
STIP	State Transportation Improvement Program	A listing of all transportation construction and improvement projects in the state that are slated to receive funding in the next three years.
STP	Surface Transportation Program	A funding category of SAFETEA-LU to be used for projects on federal-aid eligible roadways and for non-traditional transportation projects that promote intermodalism.
STPP	Surface Transportation Policy Program	A non-profit organization funded by individual donations and a range of national and regional foundations that works to ensure safer communities and smarter transportation choices.

TCM	Transportation Control Measures	Strategies to reduce vehicle emissions.
TDM	Transportation Demand Management	Any strategy, program, or combination of strategies and programs designed to change travel habits. Specifically, TDM projects are attempts to reduce single occupant vehicle trips.
TEA-21	Transportation Equity Act for the Twenty - first Century	The federal transportation legislation that was in effect from 1998 to 2005. In content, this legislation was very similar to ISTEA.
TIP	Transportation Improvement Program	A listing of regional transportation construction and improvement projects that are to receive federal and non-federal funding in the next three years. TIPs are required by each RPA in Massachusetts. TIPs are updated annually.
TOD	Transit-Oriented Development	Transit Oriented Development (TOD) refers to residential and <u>commercial centers</u> designed to maximize access for <u>transit</u> and <u>nonmotorized</u> transportation, and which offer other features to <u>encourage transit ridership</u> .
UPWP	Unified Planning Work Program	A document that defines the work to be performed by the transportation planning staff.
VOC	Volatile Organic Compounds	Air pollutant; auto tailpipe emission.
WMLEC	Western Mass Law Enforcement	Agency responsible for law enforcement in Western Massachusetts.
WRHSAC	Western Regional Homeland Security Advisory Council	The council that provides planning, financial and technical resources related to Homeland Security to all 101 communities within Hampden, Hampshire, Franklin and Berkshire Counties of Massachusetts; under the Massachusetts Executive Office of Public Safety.